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SOME HISTORICAL RESEARCHES UPON THE MECHANICAL TREATMENT OF FRACTURES OF THE LONG BONES.*

HAROLD WELLINGTON JONES,
Colonel, Medical Corps, U. S. A.; Librarian, Army Medical Library,
Washington, D. C.

What the cave man did when his enemy laid him low with a well directed blow of a stone axe so that his thigh buckled under him, we do not know. If, however, he survived to walk again, we may be sure that he received something in the way of mechanical treatment. A wise and pithy saying credited to a pioneer physician is, that he who with a shingle and a shirt cannot care for a fracture, deserves not the title of follower of Aesculapius. Perhaps the cave man was without a shirt even of sorts, and he must perforce have lacked the shingle, yet the branches of trees he had, and moss and dried grass for padding and crude thongs of hide as well as stout vegetable fibre.

There is no attempt here to cover the history of the treatment of fractures through the centuries, for indeed that would be an impossible task. My wish is rather to travel from the first recorded work in the mechanical methods of treating broken extremities through the centuries to our own times. What did the ancients have to work with and how did they use their heads and hands? Did they boast of their successes and keep silent upon their failures? They lacked any knowledge of asepsis, they had no anesthesia, they had no X-ray, no adhesive plaster. Moreover, the physicians were torn by internal dissensions and jealousies and had not, we may venture to say, the confidence of the public. They had their hands and the courage of their convictions. Let us see what they made of these.

We must not assume that the history of medicine began with the Greeks. In more than 3000 years before the time of Hippocrates disease and injury had received serious study in Egypt and in Mesopotamia. The most famous document relating to the ancient practice of medicine is undoubtedly the Ebers Papyrus, which was written about 1500 B. C., thus antedating Hippocrates more than 1000 years. Portions of the papyrus may have been written as far back as 5000 years ago, and it is in marvelously good condition. Much of it is impossble to understand clearly, since the phraseology is so archaic. The papyrus was found at Thebes in 1862 and it is concerned largely with folk lore, drugs and incantations, dividing bodily ailments into two groups, those which could be seen, such as ulcers, boils, and so on, and those which could not, as certain internal disturbances. In other words, it recognized subjective and objective symptoms.

Excavations carried on in Egypt have shown in many of the early cemeteries that arthritis and fractures of the long bones, especially the ulna, were very common, but no mention of fractures can be found in the papyrus. In its consideration of more than eighty recognized diseases such as cystitis, impetigo, falling of the womb, chalazion, and so on, there is found nowhere any reference to broken bones. We know that the Egyptians, like the ancient inhabitants of Mexico and South America, trephined the skull, yet they tell us nothing of it. What is the explanation of this? We do not know. Perhaps it was that broken bones were lacking in dignity and did not lend themselves to the use of magic formulas. Undoubtedly the unlettered bonesetter got his man, and if he had a great success could boast only to his own generation.

One who reads Hippocrates cannot fail to notice his marvelous talent for original observation, as has often been remarked. He teaches us a lesson of humility when we compare our present state of knowledge with that of our forefathers and realize how well many things were understood twenty-three

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centuries ago. Hippocrates dealt with practically everything connected with medicine and surgery, but fractures occupy no large part of his writings as far as I am able to determine.

With Hippocrates as with others in later years the word "extension" appears to be used not always as the opposite of flexion, but frequently as meaning traction or pull in a straight line or in what was called by Hippocrates, the natural direction. Hippocrates gives us some fairly elaborate means of manual extension and replacement of fractured extremities, and in common with others he lays down very definite directions for applying bandages about the fractured limb. The dimensions are given as three or four cubits in length and from three to six inches in breadth, with the warning that they should not be too wide for the size of the limb. The bandages should be removed on the third day and the limb rebandaged a little tighter. Nowhere do we find full descriptions of the *ferulae* or splints, of their dimensions, nor of the materials of which they consist. Palladius speaks of their being made of certain kinds of wood, and when wood was not obtainable reeds were to be used, and he also gives directions for applying the splints with three loose fillets, one at each end and one in the middle, while the danger of tying ligatures too tightly is emphasized.

Hippocrates, however, gives a partial description of a splint, mentioning a piece of wood a cubit or somewhat less in length like the handle of a spade, but that is as far as he goes. The use of shawls and slings is somewhat minutely described. In the case of the fracture of the bones of the leg, more powerful extension is necessary and thongs of oxskin and the nave of a wheel or other similar object were advised against counter-extension by assistants who grasped the shoulder and the ham of the patient. A smooth, round piece of wood driven deeply in the ground, the upper extremity resting against the perineum to prevent the body from yielding when the bone is pulled upon, is also mentioned. Pieces of wood, too, were fastened about the armpits on each side to aid in counter-extension. Indeed, many other methods of using wood and beams as well as windlasses are described, and we even have crude illustrations of these in early manuscripts. To those physicians practicing in a large city Hippocrates advises to have prepared a proper wooden machine with all the mechanical powers applicable in cases of fractures and dislocations, either for making extension or acting as a lever. When the parts are adjusted the bandages are applied with the limb in a stretched position, the end of the bandage placed over the fracture and the first turn made at that place. Hippocrates mentions canals or gutters, but is not certain whether they should be used. At a later date we find also a commentary by Galen who described a mechanical apparatus with a drawing of a machine so constructed "that extension and *counter-extension* are constantly kept up by a double set of pulleys." This last is one of the few places in all ancient medical literature where the possibility of continuous traction is described or considered.

Let us see what the Arabians know about fractures. Neither Rhazes of Bagdad who flourished in the ninth century, nor Avicenna who appears in Bokhara and who was known to the Arabians as the "Prince of Physicians", have given us any light on the treatment of fractures a thousand years ago. One of the best known was Albucasis, who lived and practiced in the latter part of the eleventh century. Albucasis exercised his art over a period of many years, but practically nothing is known of his personal life. He is well known, however, by his work on the *Al-tassrif*, or the "Art of healing". This work in manuscript lies in the National Library of France, and has never been published in its entirety. Translations in Hebrew and Catalan have been made, and there is also a Latin translation of the surgical section in Gui de Chauliac's *Chirurgia Parva*. Le Clerc has made a later translation in 1861, and it is the third book which is concerned entirely with fractures, that arouses our interest. Albucasis warns his students that this portion of medical science is largely abandoned to ignorant lay practitioners who have never laid eyes upon the ancient books, nor have they ever read a word upon the subject. He explains that he has studiously used the ancient lore and endeavored to understand and to apply it to the science of his day, aided by his own life long experience. Finally he has written a book in his old age containing his entire knowledge and experience. Albucasis did not "rush into print", we may be assured.

His advice on the treatment of fractures in old and young by a proper diet, his description of the signs of the different fractures and their differentiation are perfectly good today after more than eight hundred years—indeed, you could be reading a

modern work on surgery. Albucasis warns against a too strong extension and too much pressure in the reduction such as is practiced by the ignorant, as this produces inflammation. He warns that continued pain means trouble. His description of splints and bandages is minute and simple. He advises the use of liniments for the skin and soft stupes. If there is much inflammation he says we should wait and use expectant treatment. The splints should be removed or loosened in three, five, or seven days. The treatment of fractured humerus is much as practiced before the World War. He tells us that a fracture of the radius is less serious than that of the ulna and the former much easier of reduction. If both bones are fractured traction will have to be

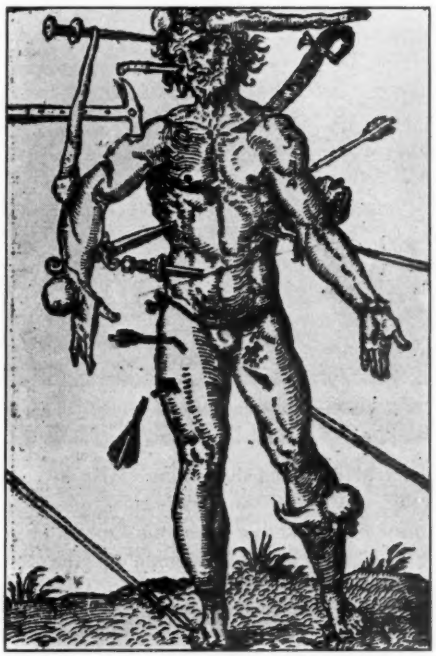

Fig. 1.—"Badly wounded man." From Tagault's Treatise on Surgery, 1580. Used to illustrate war missiles of the time and their effect on the bones and tissues.

strong to effect reduction. He recommends the use of the splint for twenty days after which a sling may be used. The fracture will be healed in thirty to thirty-two days. In leg fractures he uses a gutter splint with coaptation splints. This is especially good if the skin is in bad shape, for one can examine the skin every few days.

Nowhere do we find mention of continuous traction in Albucasis. The Arabians knew it not apparently, but merely followed Hippocrates, whose surgical knowledge Albucasis was perhaps the first to recognize, as Hippocrates was not fully known to the Arabians even at this epoch. Galen he knew and quoted in his medical writings, but we find little surgical help in Galen's writings.

One of the most famous medical men who ever lived was Gui de Chauliac, a romantic and lovable character. His name has been spelled in a variety of ways, but we can always recognize him because he is referred to as "Our Guido" or "Our Guy", his surname coming from the hamlet in which he was born in Auvergne in France. In reading the works on his life it has always seemed to me that his biographers looked upon him with love and affection. The oldest work upon his life which I have been able to examine is a book, "The Great Surgery", of some 250 pages published in 1519, more than four hundred years ago, in Latin. This is undoubtedly a partial reproduction of the manuscript written in 1363, shortly before his death. There have been a

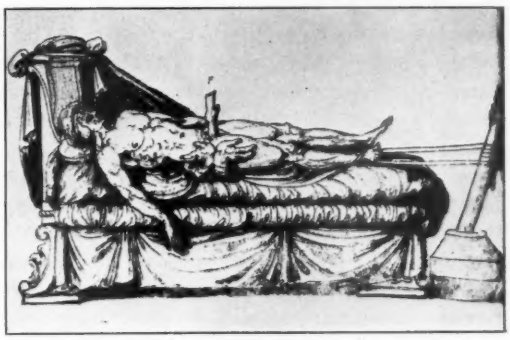

Fig. 2.—This shows an illustration used to embellish a translation of a 10th Century manuscript on surgery. Appears in Vidius' works about 1516. The artist is probably Primatrice. This illustrates an attempt at reduction of a fracture of the femoral neck. Only the hands of the operator are shown.

vast number of translations in French and in English. This work is in seven chapters on Anatomy, Aposthemata, Wounds, Ulcers, Fractures and Dislocations, Special Diseases, and Antidotes.

Guy de Chauliac is a great quoter of Galen and Avicenna—in fact, the old time medical man sometimes sounded like a lawyer, and like the lawyer he loved his precedents. Today the lawyers still cling to precedents, but in medicine the law and the prophets of yesterday are often the heresy of today. Brennan calls Gui de Chauliac a thorough Galenist and recognizing Hippocrates only when admitted by Galen.

XUM

In Chauliac's book, which was the surgical bible for centuries, we find a few pages on fractures, and he could not have known of the surgical works of Hippocrates. It is significant that this immense work on medicine in general which contains more than a quarter of a million words, devotes only three per cent of its wisdom to fractures. Apparently the old timers still liked their ulcers, their fluxes and infections best, and I am persuaded the bonesetters and barbers got most of the broken bones. Much of Guy's description reminds me with suspicion of Albucasis, and his oft quoted Avicenna does not smack of originality. Nevertheless, he was a pioneer in surgical authorship and deserves his title of "The Father of Surgery in Europe".

Three hundred years ago when the Pilgrim fathers were gathered about Massachusetts Bay, one Peter Lowe, Scottisman and Doctor in the Facultie of Chyrurgerie at Paris and Ordinary Chyrurgian to the French King, had published "A Discourse on the whole art of Chyrurgerie".

In Lib. VIII Chapter III of *"Curation of Fractures in generall"* he says, "Now remaineth the cure for the which ye must consider, first if there be inflammation, to defer the reduction till it be past, for to avoyd great accidents, then wee must have a quantity of whites of Egges and oyle of Roses beaten together with Compresses, bands, ferules, machins, lacs, oxicrate and men to helps you, with other things necessary for the purpose, there remaineth yet fiue points, the first is in extension of the member, which is done by laying it on a bence or other place proper—the sicke being well scituated, there must be two persons to hold the member fractured, the one at ye nether part, the other at ye upper part. If the hands be not sufficient to doe this wee take cords of strong cloth and binde fast the member one to the upper part another to the nether, which shall be drawne by two men contrary as ye have heard." If machines are used in extension after reduction is complete, he advises to loose the machines so the muscles may go to their own natural place. Then the fracture is to be bound up and held, and he too advises medicaments, wine, whites of eggs, oil of roses, etc. He gives long and carefully described methods of putting on the bandages and splints, but we find nowhere any mention of using weights or pulleys for continuous traction in fractures of the thigh. He tells how often to look at it, on the seventh, twelfth and twentieth days, following Hippocrates' advice. He also advises as to the kind of meat and the absence of strong drink, and if inflammation is past the patient may eat veal and mutton. At the end he makes a pithy remark that after all "It is better to suffer a little deformitie of a part than losse of the whole body, to wit, death, which often happeneth." I imagine two or three inches of shortening was counted no shame for the surgeon in those days.

Here is a small work, "The Complete Bonesetter", by Friar Moulston of the Order of Saint Augustine, printed in London in 1656. This is a treatise which covers subjects of bonesetting, ruptures, diseases of the eye, hygiene, and a large number of prescriptions for practically all known ailments, such as coughs, pains in the back, scabs, pestilences, choleras, and the plague. Also a very considerable treatise on the significance of changes in the urine. The author mentions broken bones as being accidents often happening in the country amongst poor people where surgeons, especially good ones, are very scarce. Much danger ensues to the party thus afflicted through neglect or misdressing, a point brought out during the World War and since. The first progress to be made is diligently and dexterously to bind and reunite together the fractured bones into their proper seats and places again. Second, care is to be taken that the bones thus reduced be so kept and preserved without motion to gather strength. Third, we must use means to secure callus whereby the members broken are conglutinated, joined, and fastened together again. Fourth, we should take heed to prevent and preserve the members from those accidents which are apt to follow the fracture, bringing much hurt to the pa-

Fig. 3.—Illustrating the reduction of a fracture of the leg in Germany in 1528. This is supposed to be on the battlefield but there is no evidence of any army in the neighborhood.

tient. By this the author means injuries sustained from transportation and possibly the danger of compound fracture. He gives careful directions for the molding of the fracture whereby complete reduction may be secured. Indeed, outside of the quaint expressions used one would believe he were reading a modern book.

He next speaks of the means to be used in keeping the fractured bones in position. These are splints, binding, ligature, and rolling of the fracture, and by all means, says he, "Keep the member without motion". Then follow oil of roses, whites of egg, and the use of moist dressings to draw out the humors, and so on. Now to keep the member from pain and accident there must be splints prepared, smooth and equal without roughness or crookedness, for padding. He uses cloths doubled four times, wet in rose water, with wool or cotton wrapped about the splints, binding them gently on. He cautions us not to touch any joint if the broken bone be near such, lest the joint become inflamed and ulcerated, but make the splint shorter and smaller. He does not remove the splints until twelve or fifteen days unless there be pain, inflammation, or itching in the fractured part. In such case the splints are to be unrolled the third day at the furthest, and washed with warm water. Many are the ointments of camomile, mallows, wax, frankincense, and oil of bayes, to be used to resist accidents and strengthen a broken member, but one looks in vain for any suggestion of apparatus beyond the splints and at any extension or counter extension. Withered members and shrinking sinews following broken bones are mentioned indeed, but not more than mentioned.

Now comes Verduc some two hundred and twenty-five years ago, and he too hath written a book, "La Manière E. Guérir par le moyen des Bandages, les fractures et les luxations." Let us see what the author says about fractures of the femur. He mentions the difficulty of making a diagnosis between a fracture at the neck and a dislocation, and reveals the shame and sorrow that have been his on discovering his frequent mistakes. He advises manual replacement using the palms of both hands and kneading the fracture, but "When the hands are not strong enough to make sufficient extension, recourse to the cords must be had." One is put on close to the knee and the other higher near the buttock, over good compresses wetted with vinegar and water, to prevent injury to the skin and soft parts. Two assistants pull equally with might and main in a straight line along the axis of the limb, one above and one below, carefully watching that no serious injury be done, and then the surgeon "makes the adjustments using the palms as before." Then the maneuvers over the two limbs are compared to see if reposition is correct and the splints or thin boards, the length of the compresses in the lateral parts both outside and inside, a finger's breadth apart are put on.

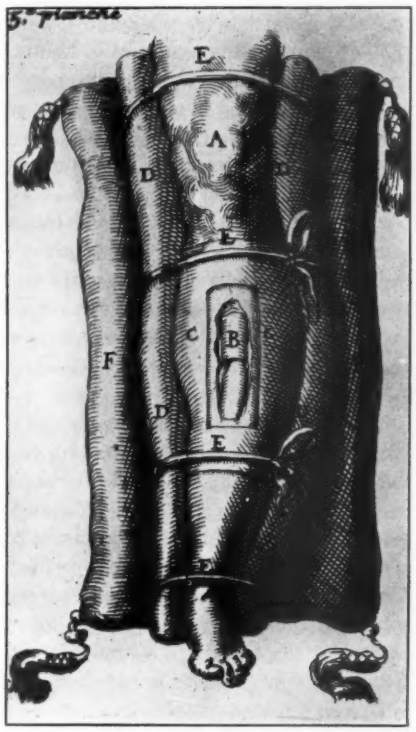

Fig. 4.—An illustration of a compound fracture of the tibia by Verduc, 1712. This is a pillow splint with side reinforcement.

This was more than 200 years ago and no illustrations appear in the tiny book written in its quaint French. One can easily picture the pulling and hauling and the screams of the patient as the burly assistants sweat at their task on the ropes—and thank God that today we have anesthesia. There is no mention anywhere of retention with the aid of traction, and we well know what happened when the muscles resumed their spasms, but undoubtedly many a reposition was well done and as good results were obtained, perhaps as was the case a few

years ago where strong skin traction with weights was applied in many cases insufficient to overcome muscular pull. We may assume that at the center of the French medical world of the early eighteenth century no such thing as constant traction was even thought of. In other words, if the immediate result was apparently good and the reduction done according to the formula, the later permanent shortening was an act of God.

In the Surgery of Jean Tagault, published in Lyon in 1580, the subject of fracture covers some forty pages of this more than 750-page book, less than 10 per cent, while ulcers occupy more than a hundred pages and wounds two hundred pages with tumors about the same. Thus we see the relative unimportance of fractures in the life of the surgeon of those days. There was nothing mystic about a fracture and you could cure it neither by an incantation nor a draught. Moreover, a good blacksmith, who was bonesetter on the side, could no doubt outdo the medical man who was frequently averse to shedding his shirt and his sweat in a cause unlikely to bring him great renown and many gold pieces.

What does M. Jean say about the matter? After his first two chapters which are devoted to the elucidation of principles not necessarily conceded at this day, he says, "When a bone is broken to the point of a solution of continuity, we should try to do what will cure the fracture by joining the disunited parts and get them to unite and then if we are unable to secure this and because of the rigidity of the parts, the alternative is to agglutinate the parts of the bone in question by other means. If this is impossible, we must admit the malady is incurable." He thus prepares what might be called in our day, an alibi!

The author goes into great detail in the matter of bandaging after manual reduction. One is struck with the frequency of his quotations from Hippocrates, Galen and Celsus, dead many hundreds of years, and the timidity of his own observations. The author makes much mention of the use of padded splints, and there are two illustrations showing the reduction apparatus used where manual reduction has failed. Continuous pull as a means of overcoming deformity and the use of weights is not mentioned. No special means of holding fractures of the upper arm or forearm can be found.

M. Le Clerc, Physician to the late French King, wrote a book in 1727 entitled, "The Compleat Surgeon." In order to avoid being misunderstood, he added or "The whole art of Surgery". Let us see what are his modest ideas. In chapter eleven we find this heading, "Of the Fracture of the Humerus or Arm Bone." This is distinct from fractures of the forearm, such fractures being described two hundred years ago as fractures of the bones of the cubit. In setting the humerus the author advises a strong extension to be made if the two ends cross. To accomplish this the patient is to be placed on a little stool or seat and supported by a servant, two other assistants being employed to draw, one at the upper part and the other at the lower, on either side of the fracture. The operator is to reduce the two bones by closing them on all sides with the palms of his hands, after which the dressing and bandage is prepared. He lays around the fracture a bolster steeped

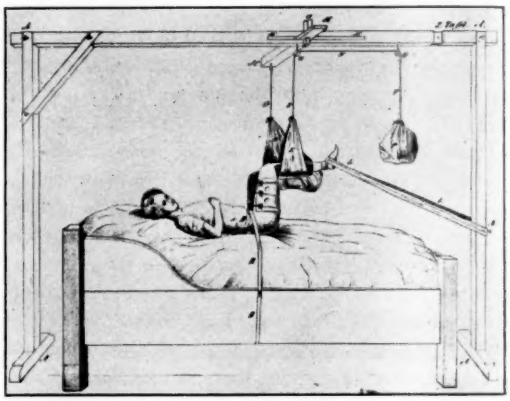

Fig. 5.—Apparatus used in Germany in 1851. Overhead traction, vertical, using the weight of the body for countertraction. This method has long since disappeared except in the case of infants where the principle is still in use.

in some proper liquor, as claret or oxycratum. Three bands are to be taken, by which are meant splints, three or four fingers broad and an ell and a half long. The splints would thus be about 2½ x 6 inches. The first of these is laid upon the fracture, around which are made three turns of the bandage. The second band is applied to the fracture on the side opposite to the first. The third band is placed anywhere that seems advisable, and several pads or bolsters laid round about the arm with many turns of the bandage around the arm and body. Finally the arm is put into a scarf, which is placed under the armpit and the four ends raised up and fastened on the opposite shoulder, the hand lying farther than the elbow.

In a subsequent chapter on the fracture of the thigh-bone, he states that if the bones pass over one

another a fracture is very evident on account of the shortening. If the hands are not sufficient to make the great extension or pull, then recourse must be had to straps and engines. Here again are many directions for applying bolsters, bands, and rollers, all dimensions being carefully given, but it is difficult to understand after all this talk exactly what the operator is to do. I find nowhere in this chapter a description of a body-splint running up under the arm as used by Desault. He advises a sole under the foot and the heel to be supported by a small roll, the thigh and leg being laid in "junks", the one (inner) extending to the groin and the other outer "somewhat longer"; apparently the long outer splint went part way up the body.

However, in another chapter there is a remark attributed to Arnaud on the fracture of the thigh, in which he says that the external splint or "junk" must go right under the armpit and be wrapped in two large napkins, one of which must pass over the belly and the other over the breast. To hinder the patient from turning across and sliding down towards the feet of the bed, he advises planting a stake into the floor underneath the bed and passing it through the matting and bedclothes, so that it may be between the patient's legs. This ought to be as thick as the small of the arm and covered with some stuff or other that it may not hurt the patient. He speaks also of two "pullies" fastened at the end of the bed with weights suspended to draw the thigh and keep it in a straight posture, and if you would not have this weight or stake you must make use of "muffles" fastened one to the upper and the other to the lower part of the thigh. These he observes draw more or less strongly and are more easy or troublesome as they consist of a greater or lesser number of pulleys. At the end he betrays his lack of confidence in this apparatus, which we must admit is difficult to understand from the description, by saying, "I advise young surgeons not to make use of this method, it being too difficult and even inconvenient for the patient."

Coming down to more modern times, at a period shortly after the American Revolution, we find a thesis by Robert Black and dedicated to his teacher, Philip Syng Physick, sometimes called the "Father of American Surgery". This is an inaugural address on fractures of some forty-five pages, and may be presumed to reflect the knowledge and practice of the treatment of fractures at one of our foremost American medical schools at the close of the eighteenth century. The author states, as had many of those who have preceded him and indeed who followed him, that since the days of Hippocrates the art of treating fractures has occupied the attention of practitioners of the healing art. The following points are of interest. In describing the position of the patient the author states Mr. Pott was the first man who warmly recommended the bending position of the limb. Mr. Bell who followed him, recommended also the bending position not only while reducing but during the cure. He remarks as to the universality of the horizontal posture on the back.

In his thesis Dr. Black speaks of the fracture box, but does not describe its use. He remarks it is no uncommon thing both in the dislocations and fractures for us to see and hear of six, eight, or even as many men as can stand around the patient exerting their utmost force to extend the limb, and frequently without success. If we take the view of the different authors on the subject, we will find that the surgeons of all the ages have put their invention to the rack to frame machines capable of exerting the greatest possible force; which has sometimes been so great as to tear the muscles to pieces while the unhappy sufferer must calmly submit to a fate sanctioned by custom. (These remarks were made with reference to the muscular obstacle to the reduction of fractures, which if it could be prevented would entail little difficulty in the reduction, and the time was of course before the days of anesthesia).

This brings us to what the author has been shooting at all the time, namely, to please Dr. Physick to whom he dedicated his work, and, second, to emphasize muscular reaction as of the greatest hindrance to success. How does he get around it? By bleeding, *ad deliquium animi*. In other words, he bleeds the poor devil until he faints, and before the victim recovers, his fracture is set, there being no pain in the manipulations. He advocates opening the red artery at the wrist if the patients do not bleed sufficiently. The sanguinary doctor insists that no danger is present and no facts support the idea that there is any fatality to be expected from massive bleeding. He condemns the splints in common use, as not only useless but even injurious since they must be bound on so tight as to practically always produce irritation and inflammation.

"The most successful and easy mode of treating a broken leg," says he, "is to place a board on the

bed or mattress, put a pillow on the board, and lay the limb in a horizontal position on the pillow; the sides of which must be pressed up against the leg; then let two thin pieces of board or shingles, as long as the limb, be placed one on each side of the pillow, and secured by tapes passed under it, and tied moderately tight." Any disagreeable effects from pressure are prevented by the interposition of the pillow. The limb may be completely reduced to its former shape; for the purpose of ascertaining this it should be compared with the corresponding sound limb, and retained by stuffing in a little tow or a few rags at the necessary points. For a fractured thigh, the board, pillow, and side pieces should be of sufficient length to extend from the top of the thigh, below the foot. The lower end of the board should be elevated so as to raise the heel higher than the hip, as it will contribute considerably to the ease of the patient and somewhat to the straightness of the limb. The author observes that persons sometimes get both legs broken, and there is therefore no sound limb for a criterion. "This is a very uncommon accident," says Dr. Black, "and when it does occur, we must reduce the limbs as near the natural state as possible, and compare them together, so that they shall at least be alike."

I looked everywhere in the thesis for any sign or description of traction in the case of fractures of the extremities, but the author makes no mention of it. Apparently he cannot be cured of his *deliquium animi*. Indeed, his last sentence is unforgettable and significant, and reads: "I will close the description by again recommending the free use of the lancet."

In the nineteenth century we find the fracture box coming into use. John Neill of Philadelphia in 1855 writes on the new means of making extension and counter-extension in fractures of the leg and thigh. Neill's apparatus is a fracture box with a foot piece. He uses adhesive plaster, kept in place by a roller bandage. Counter-extension is made against the perineum and traction is secured by using a windlass at the outer portion of the splint, the traction bands passing through a hole in that portion of the splint projecting below the foot. Up to this time, that is preceding the fifties of the last century, nothing resembling a weight for extension has been mentioned.

In 1859 two doctors named Burge of Taunton, Massachusetts, published a report of seventeen cases of femoral fracture with a new apparatus. The authors conducted experiments for more than three years, finally presenting their observations to the world before the Brooklyn Medico-Chirurgical Society. This is a small booklet of less than one hundred pages. The authors observe that the first great advance in reduction and retention was made by Desault, who introduced the long straight splint from the crest of the ilium to beyond the foot. They advocated what appears now to be a very complicated apparatus, consisting of two mattresses, a wooden platform hinged, hair cushions, padded splints, extension and counter-extension apparatus, etc. In their paper published in 1859 the authors mention adhesive plaster kept in place by a roller. They compare previous apparatus by Hamilton and others with their own seventeen cases treated with their apparatus. In a large series of other cases the average shortening was more than an inch, while in the cases reported in Burge's apparatus the average was 1/3 of one inch, certainly an excellent result if correctly measured, and comparing very well with those treated at the present day.

One would think that the experiences of the Civil War would have given impetus to new and improved methods of handling fractures, but, alas, a fracture in the War Between the States was usually compound and often fatal. I have examined thousands of pages and many hundreds of illustrations in the huge Medical and Surgical History of the War without avail as far as apparatus goes. We see everywhere evidences of shortened limbs and the pages are replete with artificial limbs and crutches. Again there was no progress.

In the years that followed, antisepsis and asepsis appeared, steel, fabric and plaster of Paris splints came into use, but no revolutionary methods of the mechanical treatment of fractures were discovered. The era of mass warfare, and of industrial and motor injuries had not arrived.

A quarter of a century ago in the Balkan War, Klapp in Beograd, Servia, used skeletal traction in fractures of the long bones by means of wire running through the bone. I am not even certain he was the first to use this means, but at least we have the date, which is more important than the person. Thus what many surgeons in the past had dreamed of, had come true. Skeletal traction had come to stay. A few years later Hertzberg in Germany and our own Ransohoff gave us "horseshoes" and tongs

which were used for the same purpose. With the succeeding years came the elaborate frames, fitted apparatus for every kind of extension and every variety of position, and, finally, the general use of piano wire for traction, as used by Kirschner and others.

What is the result of centuries of observation as shown in the writings of the foremost medical men in the more than 2000 years which have passed since Hippocrates of Cos came upon the scene? I think we can say that Hippocrates and his followers in all ages knew and diagnosed fractures of the long bones about as well as we did prior to the discovery of the Roentgen ray. In the treatment their apparatus was crude and inefficient, but in simple fractures no doubt they got some surprisingly good results. Many of their doctrines were sound. No doubt they recognized the value of continuous traction but did not know how to get it. Even as late as the fifties and sixties of the last century the apparatus used was crude, and adequate traction in fractures of the femur seldom occurred. Traction in the case of fractures of the arm was almost unknown. Many of our surgeons of recent years looked on fractured femur as operative, especially if muscular interposition was present.

So we can say that probably no startling advances occurred in the treatment of simple fractures of the long bones from the time of Hippocrates until the advent of anesthesia, one hundred years ago. Another advance occurred after 1895 when Roentgen gave us his discovery. The third great advance came, if we except the work of Hodgen and the later work of Whitman, in fractures of the femoral neck, with the Balkan and the World Wars. The Balkan frame and skeletal traction, first with the employment of the tongs and Steinman pin and later by the use of piano wire, have revolutionized much of our treatment and have made bad end-results less excusable. Of course we should not minimize the skilful operative work of the orthopedists, but that is another story and this paper is not attempting to cover it.

With the close of what is really only a fragmentary talk, I think you will agree with me that we must respect the knowledge and skill of those who for 2000 years preceded us. They had neither X-ray nor anesthetics, they had no adhesive plaster and bandages, no tongs nor piano wire: they had no asepsis, and to cut was to kill. What they saw they saw, and what they felt they felt, and their minds and reasoning powers were as good as ours perhaps, as long as they kept astrology and incantations from influencing their judgment. Lastly, they never produced that curse of modern medical literature, the "before and after" photograph wherein a hideously deformed hag on the left becomes a Miss America on the right. I have done it and so have you. May we be forgiven and may we not pity the ancient followers of the healing art who did their best even as we are doing ours today.

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THE PATHOLOGIST CONSULTS THE CLINICIAN.

REGENA C. BECK, M. A., M. D.,
Richmond, Virginia.

There are some problems in the field of the specialty of pathology that should be called to the attention of clinicians in general as, if they are not remedied, medicine as a whole will suffer. With a clear understanding of these problems, all clinicians can assist in their eradication and thereby elevate and perpetuate the practice of scientific medicine as a whole.

It is no longer necessary to emphasize that the practice of clinical pathology constitutes a specialized phase of medicine. Its efficient practice demands as much training and experience as is required in any other specialty. The many ramifications of clinical pathology as well as its close and interlocking relation to medicine in general indicates the degree to which the pathologist must be informed, and the skill and acumen he must develop.

It would be superfluous to dwell on the importance of the specialty of clinical pathology in the practice of scientific medicine, as laboratory methods have already received universal recognition and are now considered indispensable both in hospitals and private practice. Even though this fact is well known to those practicing scientific medicine it is lamentable to know that great numbers of patients, poor, middle class and rich alike are still deprived of the council of the clinical pathologist in the diagnosis and treatment of disease, therefore, deprived of the benefits of scientific medicine. Leaving out of consideration the care of the sick in the home and office, we find that the utilization of scientific medicine in the practice of medicine in hospitals is markedly restricted.

In a survey of hospitals made by Hillkowitz[1] which left out of consideration Goverment hospitals, institutions for the insane, many state institutions and sanatoria, he found that of the 3,063 hospitals in the United states, approximately one-half (46.9 per cent) are functioning without a clinical pathologist. Roughly, one-third of the hospitals approved fully or provisionally by the American College of Surgeons do not conform to its recommendation of having the laboratory under the direction of a physician-pathologist. Therefore, patients in such institutions are not being given the benefits of scientific medicine. Quite a few of these hospitals are under more or less supervision by a part time clinical pathologist, his direction is rather nominal and consists solely of interpreting such tissues as the administration or the staff choose to send him. Hospitals should not send their tissues to a pathologist and put the laboratory in charge of a technician. Such a hospital may be listed as "Class A," but, as Kilduffe[2] has said, "This signifies merely 'lip service' to set forms and standardized procedures leading to varied degrees of stagnation." A part time pathologist should be invested with full responsibility for the conduct of the laboratory and the choice of its personnel, he should visit the institution at periodic intervals and participate in the monthly staff meetings. If the hospital laboratory is important, the pathologist by whom it should be directed is still more so; for in these days it is also rather obvious that the standing of the hospital pathologist and the character and efficiency of the laboratory he conducts, which invariably must be a reflection of his own, in no small measure may well be indicative of the character and efficiency of the hospital staff in general as well as of the work done in the hospital.

Probably one of the reasons why so many hospitals are functioning without a clinical pathologist is that there are only 881 pathologists in the United States or about one to every four hospitals. Doubts have been expressed whether all of the 881 are competent to serve as hospital pathologists with all the attributes that this implies, especially in the field of tissue diagnosis. With the institution of the American Board of Pathology to certify pathologists we may expect more exact data as to the competence of the specialists in clinical pathology in the future.

How can proper service be furnished in the places now vacant of scientific guidance? Hillkowitz[1] says, "As to small hospitals, say under twenty-five beds, I hazard the opinion that, except in isolated communities, they should not be encouraged but should be absorbed by larger institutions. They are mostly operated by individual physicians, cannot afford even a technician, and often are merely boarding houses with the fancy title of hospital * * * * (this) dissipation of energy into small units is contrary to efficiency and proper planning."

Given the proper distribution of pathologists throughout the various states, the hospital laboratories now lacking trained direction could be taken care of by pathologists on a part time basis. For the entire United States, this would constitute one pathologist for every three hospitals which is by no means a difficult task in the efficient supervision of a one-hundred-fifty bed unit.

A pathologist in a metropolitan center could also easily direct the hospitals in the neighboring small towns which are now to a large extent neglected. They could thus be brought up to the level of the big town institutions.

Why, when some other specialties in medicine are crowded, should the specialists in clinical pathology be so few in numbers, and why are medical students not choosing this branch of medicine for their specialty? If there are too few clinical pathologists now, what about the future? Will there be more, or less? If there is not some way to interest talented medical students in this specialty so that there will be pathologists that are well trained and competent and whose cultural and scientific education stands on a par with that of other specialties of medicine, it will mean that the general profession of medicine will suffer to an immeasurable extent in its scientific aspects and that the progress of medicine will be retarded almost beyond conception. I will list several reasons for medical students' lack of interest in pathology as a specialty, they being the ones most frequently given:

(1) The clinician's attitude. Kracke[3] has said, "There seems to be some tendency on the part of our clinical colleagues to set laboratory medicine apart from clinical practice and to look upon the average laboratory as a room filled with peculiar, eccentric, scientific people who issue their findings in a systematic manner on pieces of white paper which are attached to patient's charts. This attitude has resulted in some hospital administrators placing the laboratory in a category similar to the drug room, the diet kitchen, the laundry and other unscientific divisions of hospital activity." In some hospitals it is debated as to whether the pathologist should be a member of the staff. Medical students hesitate to enter a specialty that is looked upon in this manner. In this connection, I can do no better than to quote Fox.[4] "A pathologist," he says, "is as much a chief and consultant as any other member of the staff and, consequently, equivalent to any staff chief. The pathologist should be in no way subordinate to the managerial director or the board of directors other than would be the case with a surgeon, a pediatrist, and the like. His duties, if they have to be outlined and interpreted, are professional matters at the discretion of the staff, (and) any member of the staff should be willing to cooperate to the extent that he would be advised and influenced by the staff as far as hospital matters are concerned * * * * Finally, the position of a pathologist must remain a professionally ethical one upon a gentleman's agreement comparable to that holding good with his associates upon the staff."

(2) The pathologists remuneration: Many factors have operated to make the economic foundation of this specialty inadequate or insecure. It should emphatically *not* follow that because, by virtue of his choice of specialty he has of necessity removed himself from the higher income brackets common to other specialties, that he should therefore be penalized in the matter of gross income or that, unlike other specialists or practitioners at large, he should be deprived of the expectation that as his skill and experience increase his income should not also. His income should average the professional income of the rest of the staff if his training and experience are on a par with theirs.

(3) Pathologists usually work on salaries: This practice has come about mainly in the evolution of this specialty in connection with the growth of hospitals, and since pathologists are often employed by hospitals the question arises, "How should the pathologist be remunerated?" The discussion of this subject would be too lengthy for this paper and has been covered most fully by Kilduffe.[2] The specialists in Roentgenology have long since settled a similar problem.

And, finally, I would like to call the clinician's attention to the semi- or total socialization of this branch of medicine. In this respect it stands unique among the medical specialties. In recent years there has been much discussion and some activity toward the socialization of medicine. For clinicians to accept placidly and even encourage the socialization of the practice of pathology is to invite and encourage socialization of all branches of clinical medicine. This socialization of pathology has come about largely through the creation of a nation-wide laboratory service operated by the various states under their departments of health. In some states such

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laboratory work is strictly of a public health nature and is designed for the prevention of infectious diseases. This should be its only function. In a few states such service is restricted to indigent patients. In most states laboratory service is available to all of the citizens. Why should the tax payers assume the expense of laboratory services for patients who can well afford to pay for them? In some states physicians send their office laboratory work, for which their patients are charged, to the State health laboratory. Hospitals have their Wassermann tests sent to the State health laboratory rather than pay a technician who is competent to perform the test and a pathologist who could supervise the work. In some states the laboratory service is not restricted to that of a public health nature but includes all phases of laboratory activity. In certain parts of New York State there are state and county subsidized laboratories which maintain a service for the sick and the well, in the home and in the hospital, day and night. This service includes not only laboratory examinations of public health interest but other procedures such as tissue examinations, preparation of autogenous vaccines, basal metabolism tests and electrocardiography. This is provided to all citizens regardless of their ability to pay. Some of these counties operate branch laboratories in the various hospitals. These governmental agencies are actually engaged in the practice of pathology. The specialty of pathology is completely socialized in these areas. *Considerable thought should be given to the ultimate effects of such a program as it may be only the forerunner of the complete socialization of clinical medicine.* Clinicians should be seriously concerned with this trend, which may well develop into an opening wedge leading to provision of clinical services on a similar basis. In fact, this is being tried out on a small scale in some areas.

In conclusion, let me quote from Kracke's[5] presidential address, "The Future of Pathology," read before the American Society of Clinical Pathologists. It was from this paper that the discussion of the socialization of pathology was taken. "Most of the difficulty with the specialty of Pathology today can be traced to economic ills. These have come about largely through the various influences already discussed. There is no question that much of the trouble is the result of the placid attitude of organized medicine in permitting an important specialty to be 'sold down the river of socialized medicine' and there is reason to believe that the specialty stands on its last legs. Few young men are going into it, so where will it be tomorrow? * * * * All of this is a bad omen for the future of scientific medicine, and there can be no doubt but that medicine will deteriorate when this comes about. The pathologist of today, if he is concerned with the future of scientific medicine, could with justification plead for the institution of federalized medicine as the best means of saving it."

SUMMARY

Clinical pathology is a specialized branch of medicine. In the practice of scientific medicine it is considered indispensable. Approximately one-half of the hospitals in the United States are functioning without a clinical pathologist, i. e., without the utilization of scientific medicine. There is but one available qualified clinical pathologist to every four hospitals. There are several different ways by which proper service could be furnished in the places now vacant of scientific guidance. Very few medical students are choosing pathology as their special field of work, so that the dirth of well-qualified clinical pathologists may be still more marked in the future, in which case the general profession of medicine will suffer to an immeasurable extent. The main reasons as given by medical students for not entering this field are: the attitude the medical profession in general assumes toward this specialty, and economic reasons. The semi- or total socialization of this specialized branch of medicine accounts for much of the difficulty. The socialization of pathology may be only the forerunner of the complete socialization of clinical medicine.

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1103 West Franklin Street.

CHILDHOOD TUBERCULOSIS—AN ANALYSIS OF SIX HUNDRED CASES TREATED WITH A SURVEY OF RESULTS ONE TO ELEVEN YEARS AFTER DISCHARGE.*

FRANK B. STAFFORD, M. D.,
Blue Ridge Sanatorium, Charlottesville, Va.,
and
V. L. KELLY, M. D.,
Pinecrest Sanatorium, Beckley, W. Va.†

For many years there has been considerable controversy regarding the probable benefit or liability from a childhood form of tuberculous infection. Some have believed that infection contracted at this period of life will protect the body against illness and death from tuberculous disease in later life. Others now feel that this first infection usually produces an allergic condition rather than an immunity, and that further infection produces disease more easily which is apt to be fatal.

This paper is a study of six hundred children who were treated in the Preventorium, Blue Ridge Sanatorium, over a period of eleven years, and presents evidence that a childhood tuberculous infection is a distinct liability and greatly endangers those infected to a relapse later from the disease, especially if they are subjected to the possibilities of re-infection.

At the time of admission to the Sanatorium the cases were worked out the best we could and classified. Those children having clinical tuberculosis were treated on the pavilions with adults, while the latent and borderline cases were placed in the Preventorium for treatment. It was difficult to classify some of the cases, especially when the physical examination was negative, the X-ray doubtful, the history questionable, and perhaps the tuberculin test negative. In our records we had some classified as latent, or suspicious, but after reviewing the data and studying the old X-ray films, we decided they should be reclassified and listed among the negative group.

A tuberculin test was done on all at the time of admission, and on about two hundred the test was repeated at the time of discharge. The intracutaneous test of Mantoux was used exclusively, 0.01 mgm. being the minimum and 1.0 mgm. the maxium dose. Old Tuberculin (O.T.) was used in except about one hundred of the cases where Purified Protein derivative (P.P.D.) type of tuberculin was employed. Stereoscopic X-ray films were made at the time of admission, and in most instances one or more sets of films were made during residence and at the time of discharge. As would be expected, some difficulty was experienced in getting good histories, but most of the time a parent, near relative, or nurse brought the children to the Sanatorium, and a history was given by them. The period of residence in the Sanatorium was a variable factor—the so-called non-tuberculous and latent, or suspicious, cases averaged about six to eight months, while those having a definite diagnosis of tuberculosis naturally stayed longer.

The physical signs varied according to the amount of disease present in the chests. The latent group with soft, or calcified nodes in the root regions occasionally gave slight dullness and increased voice conduction over this part of the chest, but, considering the group as a whole, the signs were within the normal range. The cases with a definite diagnosis, in the majority of instances, gave definite signs. In fact, where the adult type of the disease was present, especially the fibro-caseous form, the signs were often exaggerated when compared to the X-ray findings. The early exudative cases, usually classified as minimal, for the most part gave no abnormal physical signs whatsoever. It was not unusual in this group to find children who, in addition to having what appeared to be normal chests on physical examination, had no symptoms, looked well, and on X-ray examination showed definite infiltration.

A study of the symptoms was not as a whole considered satisfactory because, unless the children were really ill, their complaints were too vague and indefinite to justify conclusions. Most of the group were underweight and had poor appetites. Another frequent complaint was fatigue on exertion. The temperature records revealed the non-tuberculous

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†Formerly on Staff of Blue Ridge Sanatorium.

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and latent groups to have an average daily elevation of from a half to one degree for the first four to six weeks after admission on more than 50 per cent of the cases. The positive cases had symptoms usually in proportion to the extent and severity of the disease present. All positive cases had on admission an afternoon fever ranging from 99.4° in the minimal cases to 103° in the far advanced. Next to fever in frequency were the following: Loss of weight—85 per cent; cough—78 per cent; loss of appetite—75 per cent; fatigue—72 per cent; pleurisy—48 per cent; tachycardia—40 per cent; expectoration—30 per cent; night sweats—22 per cent; lassitude—21 per cent; hemorrhage—20 per cent; frequent colds—20 per cent; "indigestion"—18 per cent; and dyspnoea—10 per cent. The symptoms produced in positive cases of childhood tuberculosis are usually more pronounced than in a similar group of adult cases.

Three tables are presented which deal with data collected on the children at the time of admission, during their stay in the Sanatorium, and at the time of discharge. The first table shows the grouping of the children into five classes, or stages, according to the findings in the chests. Contact histories and results of tuberculin tests are also listed. Tubercle bacilli were found in the sputum of 20.8 per cent of the cases with a positive diagnosis, and all of these were either moderately advanced or far advanced. Had stomach washings been made and the mucus obtained examined for acid-fast bacilli, doubtless many more would have been found. All of those classified as non-tuberculous had negative tuberculin tests and negative contact histories.

Table II is on weights and shows that 90.5 per cent of the children gained a total of 10,142 pounds as compared to thirteen, or 2.1 per cent who lost a total of seventy-seven pounds. A few children were listed as having stationary weights, and some as not having been weighed. The positively diagnosed children as a whole showed a higher average gain than the non-tuberculous and latent groups because they remained in the Sanatorium longer.

The condition on discharge is listed under Table III. The "untreated" column of thirteen children includes a group remaining not more than thirty days, and, according to the standards established by the National Tuberculosis Association, have to be recorded as "untreated". Also, these standards will not permit children with a classification of suspicious, or latent and non-tuberculous, to be more than improved on discharge. Three in this table died in the Sanatorium—one moderately advanced (death due to complications), and two were far advanced. Thirteen were unimproved, and in this group four non-tuberculous are listed: three lung abscesses and one Hodgkin's disease. The remaining five hundred and seventy-three cases, or 95.5 per cent were improved.

A questionnaire was sent to all discharged children in an attempt to find out the present state of their health, but only two hundred and seventy-seven, or 46.2 per cent, were located for a report. Table IV contains this information.

Table V shows the results of comparison of X-ray films of eighty-eight children, averaging in time five years after discharge. This table is valuable since the opportunity has been afforded of studying serial roentgenograms of the chests of these children after discharge from the Sanatorium. The films were obtained principally from two sources: some of the children had returned to the Sanatorium periodically for examination, at which time films were made; and others were taken in the field by the chest clini-

TABLE I.—GENERAL INFORMATION ON THE CHILDREN WHILE UNDER TREATMENT

Stage	No.	Average Age Yrs.	Sex		Sputum			Location		Contact		Tuberculin Test		
			M	F	Pos.	Neg.	N. E.	Urban	Rural	Pos.	Neg.	Pos.	Neg.	Not Done
Non-Tuberculous...	125	10	55	70	0	3	122	73	52	0	125	0	125	0
Suspicious or Latent	360	10.4	156	204	0	10	350	204	156	262	98	267	93	0
Minimal.....	77	10	39	38	0	9	68	43	34	63	14	55	3	19
Moderately Advanced.....	19	13.6	7	12	6	4	9	14	5	17	2	10	1	8
Far Advanced.....	19	12.6	9	10	18	1	0	8	11	17	2	7	0	12
Total.....	600	11.3	275	325	24	27	549	342	258	359	241	339	222	39

TABLE II.—WEIGHT RECORD WHILE IN SANATORIUM

Stage	No.	Gain	Loss	Stationary	Not Weighed	Total Pounds Gained	Total Pounds Lost	Average Gain Pounds
Non-Tuberculous....	125	119	4	0	2	1,999	12	16
Suspicious or Latent.	360	353	3	2	2	5,918	7	17.6
Minimal.....	77	74	1	2	0	1,650	2	22.3
Moderately Advanced.....	19	16	1	1	1	384	5	24
Far Advanced.....	19	12	4	0	3	191	51	16
Total.....	600	574	13	5	8	10,142	77	18.8

Children classified as Non-Tuberculous or Latent remained in Preventorium an average of 6 to 8 months; Minimal cases 8 to 12 months; and Moderate and Far Advanced cases 1 to 3 years.

cians, and through the courtesy of the State Department of Health they were made available for our study. In some instances as many as four or five serial sets of films had been taken. Thus a true conception was obtained of the pathologic changes which had developed during this period and the proper evaluation placed on them rather than to have to depend on the symptoms, physical signs and clinical course, which are so often deceptive in this class of patients. An X-ray classification is made according to the type of lesion found, which is as follows: (1) Calcium confined to the lymph nodes in the root zone and paratracheal region; (2) Calcium seen only in the parenchyma of the lungs; (3) Calcium found in both root zone and parenchyma; (4) Questionable calcium seen anywhere; (5) Definite exudate in the parenchyma without calcium seen anywhere; (6) Chest negative—no changes noted which may be considered abnormal. Had oblique and lateral films been taken no doubt some would have shown calcium in the deep root zones and mediastinum which was not detected in the routine postero-anterior position. Some of the cases were difficult to place in any group of this classification on account of the over-lapping of the type of lesions. However, a satisfactory grouping is believed to have been made by placing the cases in the table according to the predominance and type of the lesions. Mention should be made of some of the cases which had soft nodes that had not calcified when the first films were made; also, some were enlarged and had flakes of calcium interspersing lighter areas of caseation—so-called caseo-calcareous nodes. Obviously glands of this type are unhealed and active, and were so considered in the classification.

DISCUSSION

From the 277 (46.2 per cent) children located for a report it was found twenty-five had relapsed since discharge. These were as follows: two in the non-tuberculous group, six in the latent group, five in the minimal, four, or 36.3 per cent of the moderately advanced group, and eight, or 72.7 per cent in the far advanced. The fifty-nine cases heard from with a definite diagnosis of tuberculosis had 30 per cent relapses, as compared to 3.6 per cent heard from with a questionable diagnosis. From this it is noted, all things being equal, that a child with a definitely active tuberculosis is ten times more apt to relapse after treatment than one with a latent case. Also, if the child is classified as moderate or far advanced, the chances for relapse are about one out of three.

The children reporting they were either working

TABLE III.—CONDITION ON DISCHARGE FROM SANATORIUM

Stage	No.	Arrested	Appt. Arrested	Quiescent	Improved	Unimproved	Died	"Untreated"
Non-Tuberculous.....	125	0	0	0	116	4	0	5
Suspicious or Latent.....	360	0	0	0	357	0	0	3
Minimal.....	77	20	8	30	15	1	0	3
Moderately Advanced.....	19	3	3	6	6	0	1	0
Far Advanced.....	19	0	0	1	8	8	2	0
Total.....	600	23	11	37	502	13	3	11

or in school are considered well in the table, although a few stated they rested after school or after work hours. In this well group 243, or 87.4 per cent, are listed, and again it is seen that the highest per cent considered well are not among the positive cases, but in the latent class. Surely our former belief is here sustained that a child with a definitely active tuberculosis almost invariably has a bad prognosis.

Fifty-five children admitted returning home to a source of further contact, and doubtless many more did but left the question unanswered. It is noteworthy that all of the cases which relapsed came from this group of home contacts. Two children who relapsed in the non-tuberculous class, and whose tuberculin tests were negative while in the Sanatorium also returned home to contact, and at the clinic they attended the tuberculin test was found to be positive and the X-ray films of their chests revealed tuberculous exudates.

In some instances where there was a negative contact history on admission to the Sanatorium, the X-ray showed no signs of infection. In some of the children with negative tuberculin tests definite evidence of old infection was present on X-ray, and on studying the histories it was found that the contact had been broken for a considerable period of time. It is assumed that these cases had not taken tubercle bacilli into their bodies for some time, and as result of this, allergy for the bacillus had been lost and negative tuberculin tests were the result. A few of the tuberculin tests were negative on admission to the Sanatorium due to fever, and after the fever had subsided were found on retesting to be positive.

There was a decided increase in incidence of positive reactors to the tuberculin test with the increase in ages of the children; about two-thirds of the positive tests were between the ages of ten and fifteen years. This only confirms what has been found by others working on this problem. Chadwick and Zack[1] plotted the percentage curve of tuberculin reactors according to age on 42,071 school children routinely examined in Massachusetts. At the age of five years only 20 per cent were positive, while at the age of fifteen 35 per cent gave a positive test. In their school work there was, in addition to an increase in reactors with advance in age, an increase in positive tests in those children coming from homes where tuberculosis existed.

TABLE IV.—FOLLOW-UP REPORT ON CHILDREN FORMERLY TREATED IN THE SANATORIUM

Two Hundred and Seventy-Seven Questionnaires Returned

Stage	No. Heard From	Tuberculin				Returned Home to Contact			Weight			Present Condition				
		Tests Done	Pos.	Neg.	Not Done	Yes	No	Not Ans.	Gain	Loss	Not Ans.	Well		Resting	Relapsed	Dead
												Work	School			
Non-Tuberculous	54	10	2	8	44	7	44	3	49	4	1	16	36	2	2	0
Suspicious or Latent	164	34	15	19	130	24	125	15	139	10	15	44	111	3	6	3
Minimal	37	16	14	2	21	12	21	4	32	5	0	13	15	4	5	1
Moderately Advanced	11	3	3	0	8	5	3	3	3	8	0	4	1	3	4	1
Far Advanced	11	0	0	0	11	7	2	2	5	6	0	2	1	5	8	3
Total	277	63	34	29	214	55	195	27	228	33	15	79	164	17	25	8

NOTE: All data given above is on cases since discharge.

TABLE V.—RESULTS OF COMPARISON OF X-RAY FILMS OF A GROUP OF CHILDREN TAKEN ONE TO ELEVEN YEARS AFTER DISCHARGE

X-Ray Classification of Lesions, Comparison of Tuberculin Tests, and Contact Before and After Treatment

Type of Lesion	No. Cases	Change in Lesion				Tuberculin Tests					Contact				Present Condition			
		More Ca.	Ca. Harder	Exudate		In San		Since Discharge			Before Treatment		After Treatment		Well		Re-lapsed	Not Ans.
				Less	Develop	Pos.	Neg.	Pos.	Neg.	Not Done	Yes	No	Yes	No	School	Work		
Root Zone and Tracheal Calcium	38	18	20	6	5	35	4	10	8	17	36	2	15	20	20	10	5	3
Calcium in Parenchyma Only	4	0	4	0	0	2	2	0	1	2	4	0	1	2	2	1	0	1
Calcium in Both Root Zones and Parenchyma*	25	13	12	3	1	22	3	7	6	4	23	2	8	9	11	5	1	8
Questionable Calcium in Chest Anywhere	9	0	0	0	0	1	8	0	4	4	1	8	0	8	8	0	0	1
Exudate Only	5	1	0	3	2	5	0	1	1	3	5	0	2	3	3	0	2	0
Negative	7	2	0	0	0	0	7	2	3	0	2	5	3	3	5	0	1	1
Total	88	34	36	12	8	65	23	20	23	31	71	17	29	45	49	16	9	14

*Three pleurisy with effusion cases are included in this group.
Average period between films for entire group is five years.

In the table of eighty-eight children on which serial stereoscopic roentgenograms were available for interpretation and comparison, an opportunity was given to study the type and extent of pathology in the chests and in general to learn more about the cases than was available in the material listed in Table IV. In the returned questionnaires seventy-four, or 84 per cent, of this group were included, and 87.8 per cent were considered well and 12.2 per cent had relapsed. The largest number of relapses occurred in the children grouped under calcium found in the root zone and paratracheal regions. Also, more exudate developed in this class and was responsible for 55 per cent, or five of the nine cases requiring treatment again. Most of the exudative cases followed on the serial films resembled the re-infection form of adult tuberculosis by beginning in the subclavicular areas, usually in the region of the first and second interspaces, and from there spread into the apices. It is believed from the study made on the children in this group that the exudative form of tuberculosis, especially if it is the re-infection type, is usually of a more serious nature, and close supervision and prolonged treatment are necessary if a high mortality is to be avoided.

Rathbun[2] did some excellent work on childhood tuberculosis with results similar to what we have found. He made a survey of a large group of adolescent children with definite pulmonary tuberculosis, and found that 70 per cent of the group on serial X-ray films had evidence of tracheobronchial lymph node disease which had been present from childhood. No mention, however, is made of the number of cases which developed disease in those with calcium in the parenchyma of the lungs.

In discussing the significance of tuberculous lesions, Hertherington[3] has this to say: "Calcification of the tracheobronchial lymph nodes recognizable in chest films of children indicates heavy exposure to tuberculosis earlier in life, and a second exposure to the disease from a new source of contagion is likely to produce disease." In the group of cases which he reports with active disease 27 per cent had calcium in the root zone and the exudative areas noted were first subapical in location, later spreading into the apex. This work corresponds favorably with what we have to report, except he had a larger per cent of children with tracheobronchial infection which later developed exudative lesions and relapsed than we had—our's being only 13.2 per cent, or about half the number Hetherington lists.

The cases with calcium in the root zone and parenchyma numbered twenty-five, and seemed as a whole to do well after discharge, as only one relapsed. Three cases of pleurisy with effusion were found in the entire group of six hundred, and it is significant that they all occurred under this heading. Two of the cases had the effusion on admission to the Sanatorium, and made good recoveries and are now in school. The other case developed at home after returning to a source of intimate contact with an "open" case, and is now resting and is listed above as relapsed.

Before concluding this paper, it is eminently necessary to determine just what evaluation, if any, should be placed on this work. Was preventorium treatment beneficial to this group of children is the question which requires consideration and, if possible, an answer. Unfortunately we have no controls who did not have preventorium treatment for comparison, and on this account it is difficult to draw any definite conclusions. However, the separation of these children from the sources of infection in the home is believed to be an outstanding factor in the treatment. It will be recalled that 60 per cent of the entire group treated gave a history of contact on admission to the Sanatorium, and 92.4 per cent of those with a positive diagnosis stated there were one or more "open" cases of tuberculosis in their homes.

The training received in personal hygiene and tuberculosis prophylaxis is believed to be of lasting benefit. The gain in weight and growth and development which occurred in nine out of every ten children is also considered valuable. The follow-up work on the discharges which revealed 87.4 per cent of those heard from as well, and either in school or working speaks for the value of the work.

There is, however, one phase of the work which is alarming and which should be corrected insofar as it is feasible to do so; and that is the necessary steps should be taken to prevent re-infection on returning home. About 20 per cent of the children who returned their questionnaires stated they had returned home to a further source of infection, and all of the cases, as noted above which relapsed after treatment, were included in this group. This fact is of sufficient magnitude to warrant investigation

of home conditions of all the children when they are ready to be discharged from the preventorium.

Opie,[4] writing on tuberculous re-infection, has this to say: "In my experience calcified nodes in the chest signify tuberculous infection and have been followed by the adult type of tuberculosis only when there has been continued contact with 'open' disease."

Hawes[5] followed a group of 712 children after discharge from the preventorium over a period of ten years, and found 109 who had returned to homes where the original sources of infection had not been eliminated and all were apparently doing as well as the other group in which the "contacts" had been removed. He states: "The only reason I can see for this must be the training and education given these patients and other members of their family by our own workers. This to me shows plainly the value of preventorium work carried on outside the institution. Infected children need training and education—the preventorium or its equivalent is the best means of doing this."

SUMMARY

1. A follow-up study made on six hundred children discharged from the Preventorium shows that all of the relapses after treatment had returned home to further contact with active tuberculosis. This definitely shows the great importance of breaking the contact with the tubercle bacillus in children who have been previously infected.

2. The amount of tuberculous infection present has a definite bearing on prognosis as shown by the fact that only 3.6 per cent of the latent cases relapsed as compared to 30 per cent of the cases with a definite diagnosis of tuberculosis. Thus the incidence of relapse may be fairly accurately estimated on the amount of demonstrable tuberculous infection and disease present, and the probability of further infection by contact with an "open" case.

3. On discharge 95.5 per cent of the children were definitely improved, and 90.5 per cent had made an average gain in weight of 18.8 pounds.

4. Of the children located for a report after discharge, 87.4 per cent were considered well and either going to school or working.

5. On the basis of the results of the work here reported it is believed that preventorium treatment is of definite value to those children who have tuberculosis, especially the latent form of the disease.

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DISCUSSION

DR. L. T. ROYSTER, University: This study of tuberculosis in children as reported by Dr. Stafford and his coworkers from the Blue Ridge Preventorium furnishes a good survey of the class of cases that come to the attention of physicians in this state, and it is such studies as this from which we acquire, more or less, definite information that will help us in the fight to combat this disease.

I think that Dr. Stafford has attempted to make too many classifications and am extremely doubtful if such classifications can be followed in appraising a case and if it can be of any great practical use. There are so many phases of the tuberculosis problem, especially as relates to the difference in the manifestation of this disease in childhood and in adult life, that it is difficult to discuss the matter in the few moments allotted to the discussion in this meeting. In spite of the fact that the outstanding and perhaps the most important phases of tuberculosis in childhood are agreed upon, there still remain certain differences in opinion among those most widely experienced which will and must be cleared up in time. From a practical point of view, some of these differences are not important in relation to the handling of the individual case, and yet it is possible that when they are cleared up, or at least coordinated, they may prove to be of definite importance.

So far as first infection goes, it is extremely doubtful if a diagnosis can be made by physical examination alone. I think it is safe to say that the only reliable diagnostic criteria are the tuberculin test and X-ray. The tuberculin test shows sensitization due to the presence of infection; it does not locate the lesion. The X-ray tells us in most instances where the infection lies and the extent of the lesion. The final proof—the finding of bacilli—is difficult to obtain, and even where the case is non-productive, bacilli are not infrequently found by means of gastric lavage.

It has been shown that up to adolescence, children are usually able to survive and in many instances overcome first infections; however, during the course of the first infections metastatic lesions are developing, and it must be borne in mind that among these metastatic lesions may be placed tuberculous meningitis, which is almost always a metastasis of the first infection.

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A positive tuberculin test indicating sensitization to the first infection appears usually within two or three weeks from the establishment of the first infection, but if the positive reaction is longer than six months it is almost certain that we are dealing with a second infection type.

There can be no doubt that second infections occur from contact with open cases discharging large numbers of virulent bacilli, especially where the child has been in another environment for treatment and is returned to the active tuberculous milieu. However much we may realize that a second infection may be from either exogenous or endogenous sources, it is pretty certain that the vast majority of second type cases develop either as a result of endogenous infection from the primary focus or from endogenous infection from a secondary focus acquired as a metastasis during the course of the primary lesion, and I think it is quite safe to say in the large majority, opinion on this subject is that no benefit can be derived from first infection.

This brings me to my concluding remarks: First and most important is the prevention of any infection. Means to accomplish this are not yet within our control. It is to my mind a serious question whether sanatorium or preventorium treatment in first infection is of sufficient advantage to justify the necessary expense. The second thought is one which I want to stress very strongly, and is one which I have emphasized over a number of years and so far as I know I am the first person to emphasize it: this is that the only way to further reduce the present incidence of tuberculosis is through systematic tuberculin tests on all school children and all pre-school children where possible, with a subsequent check of the families of those proving positive reactors. I believe that money spent in this direction will redound to the elimination of this disease as no other method yet devised can do.

DR. WM. B. MCILWAINE, Petersburg: I think we should be very much pleased with Dr. Stafford's presentation. It certainly brings to our minds the fact that we CAN diagnose tuberculosis in childhood, and therefore we have a chance of making these cases practically immune in adult life if we follow along simple lines. I think this paper is excellent and one that should be taken advantage of in our practice.

I want to ask Dr. Stafford two or three questions: In the first place, I think the term "relapse" is a little too loosely applied. Dr. Royster's discussion, however, brought out the point I wanted to ask Dr. Stafford to refer to in his closing discussion; that is, whether he considers these relapses due to re-infection in the home from an open case or whether it is due to lack of rest and the environment of the home from which the child came in the first place makes the child relapse because the lesion had not been entirely healed in the preventorium or sanatorium. Do we have re-infections in tuberculosis, or do we have relapses? It has been a question in medical circles for some time whether we have re-infections or have relapses.

Next, did Dr. Stafford take into account in his histories of 600 cases the bovine tuberculosis? I personally have the feeling that in Virginia bovine tuberculosis is exceedingly rare. I have felt for some time that tuberculosis among children is due to infection from adults and is not bovine tuberculosis.

Next, what percentage of cases treated in a preventorium have died of the miliary form of tuberculosis or from tuberculous meningitis? I think that would give us the end-results of preventorium treatment. If he has a very low percentage dying from those two causes, whereas in private practice we have a large percentage, then it is an argument in favor of preventorium treatment.

I should also like to ask Dr. Stafford how many cases show involvement in other parts of the body, particularly the cervical glands? As you know, involvement of the cervical glands has been considered very, very common, whereas in my experience it is rare. I think the first appearance of tuberculosis in the child is in the chest rather than in the cervical glands.

All these points are practical, and I hope that Dr. Stafford will discuss them in his closing remarks.

DR. CHARLES SCOTT, State Department of Health, Richmond: I should like to thank Dr. Stafford for his valuable contribution to our knowledge of childhood tuberculosis. There is only one point I wish to discuss, and that is the control of contacts in the home. We have been stressing this, and we feel that the majority of our active cases of tuberculosis in children—or practically all of them—give a history of known contact in the home. I think the whole tuberculosis control program is built around this one factor, and that is the open contact case in the home. It is true that our modern treatment of tuberculosis greatly prolongs the life of the moderately or far advanced case of tuberculosis, but there has not been any appreciable reduction in the mortality of known moderately or far advanced cases. The majority of the reduction in tuberculosis has been in the prevention of infection, and I am glad to see (in some of my fields) that the general practitioners are doing tuberculin tests. I think that it is a valuable procedure if properly administered and interpreted, and if physicians will do what has been brought out so forcefully here this afternoon, i. e., if they will X-ray all tuberculin reactors and will examine and X-ray all the contacts in the homes, whether sick or not, they will unearth a great many cases of tuberculosis.

Another factor that is just as important, or more so, is that the practitioners should, whenever they find a case of tuberculosis in their practice, make an effort to examine every member of that household, from the grandparent down to the servants, and make X-ray examinations of their chests. As a matter of fact, the majority of early cases of tuberculosis all over the country have been found by this procedure.

I should like to ask Dr. Stafford one question: How often do you feel that these children with latent cases of tuberculosis should be X-rayed? We feel that they should be X-rayed yearly, if possible, or more often if there is active or an appreciable amount of pathology.

DR. CLAIBORNE T. JONES, Petersburg: The program outlined in the remarks of the gentleman who last spoke would be fine; but the economic condition in our State, it seems to me, absolutely precludes carrying out such a program as he mentions unless we had some contribution

from the State to aid us in that. I might say that in my practice not one family in a hundred could stand the expense of X-ray examination of all members of the family. It sounds mighty good; but I do not see how it could be done, to save my life.

I should like Dr. Stafford to give us some idea on the separation of these children when they come back from the sanatorium. I have one now that is to be sent back to me. The contact is the grandmother. I do not know what to do. The mother's sister does not want the grandmother. The family that have her do not want her, but they cannot get rid of her.

DR. G. F. SIMPSON, Purcellville: It is not customary for the chairman of any meeting to discuss a paper, but I do want to ask Dr. Stafford to put one thought into the minds of the profession. I am quite sure that if we had the statistics of the general men practicing in the State of Virginia we would find that most of our cases of childhood tuberculosis are due to the fact that some adult in the home has tuberculosis. I remember many years ago, when we first started Catawba Sanatorium, I had six adult cases of active tuberculosis and one child that had an arrested or latent lesion, not diagnosed by X-ray or anything of that kind but by positive sputum examination. I had the State man come to the county and go over these cases. The funds were not sufficient to send them to the sanatorium, and they were accepting only incipient cases. Four cases of childhood tuberculosis came out of those six families. I see every year of my life some adult sent home from some institution, improved or arrested. A patient of mine who was in Catawba, because he got peeved or something of the kind, went home. He had tuberculosis, but they could not keep him if he did not want to stay. He had a wife and six children. Some weeks ago they appealed to me to do something to get him in a sanatorium, because the farm that he rented had been sold and nobody would rent them another one while he had an active case of tuberculosis. It took me six weeks to get that patient into the sanatorium. I am strongly impressed with the idea that the thing we want, and that is important in control, is provision for the care of the active (I might say incurable) cases of tuberculosis, so that they will not be returned to the community or to the home to reinfect others. I think that is a very important thing for us, as physicians, to think about.

DR. STAFFORD, closing the discussion: I want to thank these gentlemen for their very generous discussions of this paper. One question has come up which is almost universal whenever tuberculosis is mentioned, especially the childhood type, and that is in reference to re-infection. I do not know of anything that is any more controversial right now than whether or not patients who develop clinical tuberculosis have done so as result of the first infection (primary infection), or whether re-infection—either exogenous or endogenous—has taken place in the production of clinical disease. According to the best authorities, the first infection lesions in children are usually not disabling, that is, they may not produce symptoms, and the child so affected may entirely overcome this, and the true condition may never be detected unless X-ray films of the chest are made. But if the contact is continued, and if reinfection is permitted, then the reinfectious process will soon overwhelm the child, and clinical tuberculosis is the result.

In the discussions the question has been asked, What should be done about these cases with primary infection? It is indeed a difficult problem to decide. We have reported here six hundred cases which had preventorium treatment, and almost half of them were located and follow-up reports gotten on them from one to ten years after discharge. Twenty-five had relapsed, and all of the relapses had returned home to further exposure to active cases of tuberculosis. Some of the relapses were no doubt due to poor living conditions at home, causing a reactivation of the old infection. Dr. Hawes, of Boston, has partly solved the problem of reinfection in this way: He has a regular group of field workers—nurses and social workers—employed, and when a child breaks down and is sent to the Preventorium for treatment, these workers go into the home and search for and isolate the "open" cases. Then, when the children are ready to leave the Preventorium and return home, the contact and further infection is no longer there.

Dr. McIlwaine asked how many of these cases were due to the bovine and how many to the human strain of the tubercle bacillus. There are, of course, certain cultural and morphological characteristics which differentiate the two, but we had no means of determining these.

The question has come up as to how many of these cases died of miliary tuberculosis or tuberculous meningitis. The three deaths which occurred in the Sanatorium were all of the fibro-caseous, or adult type of tuberculosis. The returned questionnaires were not very satisfactory in this respect, and there may have been some of the eight deaths since discharge from the Preventorium that were due to these causes. In the sanatorium we have had only one case of miliary tuberculosis to develop in a child over a period of several years.

In regard to how many of these children had the complication of tuberculous cervical adenitis, it may be said that out of the six hundred, there were only four or five, or less than 1 per cent, that we could say definitely had tuberculous infection of the glands. A great many more children than that came in with enlarged glands in the neck, but usually there was some other form of infection in the upper respiratory tract responsible for these changes, and when this complication was corrected the glands were reduced in size.

Dr. McIlwaine has asked how often these latent cases should be X-rayed. At least twice a year, or every six months for a period of two or three years. If at the end of two or three years they are doing satisfactorily, then once a year would be sufficient. However, no general rule can be laid down because this is an individual problem. There may be conditions in the home that will require checking up the child oftener than every six months.

Dr. Simpson brought out a very important point, and it is one that bothers us considerably. We have adult cases come to the Sanatorium with "open" tuberculosis, and we know that they are a menace from the standpoint

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of spreading the infection to the community in which they live, and certainly to the people in their homes. But we have no police control over them, and if they refuse to listen to reason and say they are going home, there is really no way we can stop them. If they are forced to stay unwillingly, they are often a disturbing factor to the other patients. These cases should be isolated to prevent spreading tuberculosis and should not go back to their homes. Usually they have not stayed in the Sanatorium long enough to learn the proper precautions and do not know how to prevent infecting other people. We have many problems of this nature with certain classes of patients. The State Farm is probably the solution to this situation, and we have been recommending that obstreperous cases be sent there.

TWELVE YEARS' EXPERIENCE WITH IODIZED OIL.

DEAN B. COLE, M.D.,
and
WALTER L. NALLS, M.D.,
Richmond, Virginia

In 1933 we reported our results on the treatment of one hundred and forty-two ptaients with intratracheal injections of iodized oil. Since this report we have used iodized oil intratracheally on an additional four hundred and sixty individuals. Within a period of twelve years these six hundred odd patients have received more than ten thousand injections. In many severe sub-acute and chronic infections involving the tracheobronchial tree such as bronchitis, bronchiectasis and intractable bronchial asthma, treatment with intratracheal injections of iodized oil will often afford relief when the usual measures have failed. We recognize that this procedure is not without some risk, but we believe the dangers attending its proper use have been over-emphasized.

It is now generally known that iodized oil is a compound of iodine and a vegetable oil, usually poppy seed or sesame oil, and sometimes peanut oil. The simple neutral vegetable oils are used because it is found that they are non-irritating to the tracheobronchial tree. Pinkerton, working with experimental animals, injected various oils intratracheally and studied the effect of these oils on the tracheobronchial tree and lung. As the result of this work he states that the simple neutral vegetable oils produce no reaction and do not appear to injure the lungs in any way. They appear to be removed from the lung entirely by expectoration. He concludes further that mineral oils are emulsified and taken up by phagocytic cells in the aveoli and consolidation of the lung is produced. Giant cell formation and fibrosis are also evident as early as the second month after mineral oils are injected. Because of this, the practice among some physicians of diluting iodized oil with mineral oil should be discouraged. Unfortunately, many physicians confuse mineral with vegetable oils and because of this are skeptical about the usefulness of iodized oils.

Since iodized oil is not a mixture of iodine and an oil, but a true compound necessitating a careful chemical balance in which the iodine is part of the molecule, there is no free iodine present unless the oil has deteriorated. Any deterioration with the liberation of free iodine is readily recognized by the change in color and turbidity of the oil. Should the oil turn dark or become turbid it should not be used since deteriorated oil contains free iodine and is irritating to the tracheobronchial mucosa.

Iodized oils were first prepared more than eighty years ago. Personne in 1856 compounded a true iodized oil when he succeeded in making oil of almond absorb 5 per cent of iodine. In 1896 Winternitz introduced into therapy a chloro-iodized oil under the trade name "Iodipin". Lafay in 1901 prepared the first purely iodized oil.

Olive oil is not widely used in the tracheobronchial tree, although it was one of the first vegetable oils used for intratracheal injections. Osler used a solution of olive oil eighty-eight parts, menthol ten parts and guiacol two parts in the treatment of bronchiectasis. He recommended as still better the addition of iodoform to olive oil, especially where the odor was offensive. Of this substance he injected into the trachea one dram once or twice daily as indicated.

Prior to 1921, iodized oils had been used only therapeutically and in that year Sicard, Forestier and Leroux succeeded in outlining the tracheobronchial tree by injecting lipiodol into the trachea.

They reported obtaining beautiful X-ray pictures of the tracheobronchial tree without harmful effect to the patient. This climaxed numerous attempts by different investigators at lung mapping, and the value of lipiodol as a diagnostic measure was soon established. Although iodized oil may be of diagnostic value in any obscure condition of the lungs or tracheobronchial tree, especially where the lung field is obscured by pleural thickening, atelectasis or fibrosis, it is of particular value in delineating a distorted, dilated, narrowed or occluded bronchus. Frequently it is the only method by which we can prove or disprove the presence or closure of a lung cavity. In outlining pleural fistulous tracts and in determining the presence of lung cysts, the oil is injected directly into the fistula, pleura or cyst, and we know of no other way to obtain such information. For diagnosis we prefer the heavier oil and find the 40 per cent lipiodol very satisfactory. Its greater viscosity and high iodine content make it more suitable for diagnostic purposes. As a therapeutic measure, however, we prefer a lighter oil which is lower in iodine content and is less viscous and which we believe makes a more satisfactory preparation for therapy. Because of its greater fluidity it is much more easily administered.

We feel that the successful use of iodized oil in the tracheobronchial tree requires both care and discretion despite the reported harmless use of the oils in practically all of the body cavities, soft tissues and even in the blood stream. Its indiscriminate use in diagnosis or treatment is not justified. It is our practice to examine every patient including X-rays of the chest before administering the oil since this substance is radio-opaque and may otherwise confuse the picture or lead to an erroneous diagnosis.

Contraindications for the use of iodized oils in our experience are few, but definite. They are: 1. Debilitated patients where the risk is greater than any possible good that might be accomplished either in diagnosis or treatment. 2. Acute active tuberculosis. 3. Idiosyncrasy to iodides.

With the first group, debilitated patients, we have had but little experience, although we have given the oil to patients with severe bronchial asthma without harmful results. We have also given it to patients with cardiac decompensation who had an accompanying bronchitis with uncontrolled cough. Our results in the treatment of these cases have been very encouraging. In our experience with more than six hundred patients to whom we have given the oil, in only five has a lesion of undetermined origin later proven to be tuberculous. So far as we have been able to determine, no harm was done these patients and the tuberculous lesions were not unfavorably influenced by the oil. Amberson and Riggins have well pointed out the dangers attending the use of iodized oil in acute active tuberculosis as well as in acute lung abscess and pneumonia. It is generally agreed that acute active tuberculosis contraindicates the use of iodized oil and we have had no occasion to use it in these cases. We have, however, given the oil to many patients with a chronic fibroid tuberculous process without ill-effects and find it useful as a diagnostic procedure in patients who have had a thoracoplasty and in other patients where the lung field is obscured as the result of pleural thickening, atelacetasis or fibrosis. In such cases by outlining the tracheobronchial tree it is often the only method of determining the closure of cavities and the presence of bronchial dilatation. Its value and relative harmlessness in such cases has been adequately demonstrated by Murphy, Neuhof, Potter and Pagliughi. Potter and Pagliughi in a subsequent paper have reported the use of lipiodol in one hundred and eighty tuberculous patients without harmful results. They state, "Further proof of the importance of avoiding the introduction of lipiodol in exudative lesions lies in the fact that, in our series of one hundred and eighty cases, we have not met with a single instance of aggravation of a previously existing process or of dissemination to other parts of the lung as shown by serial roentgenograms during a period of several months to two years following bronchographic studies." They further quote Mandelbaum as follows: "I, myself, have bronchoscoped and injected over ninety tuberculous patients, having given in all two hundred and fifty injections without any serious sequela. This was due to the fact that my cases were carefully selected as were yours."

In only ten patients have we observed symptoms of iodism. Four of these had slight swelling of the salivary glands with increase in saliva and metallic taste. In these, symptoms lasted only for a few days and did not recur following subsequent injections of the oil. Two patients have shown mild skin manifestations of iodism, without systemic symptoms, which cleared up within a few days. In four patients we have encountered reactions which we

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have classified as severe. Three of these had laryngeal odema which responded well to adrenalin and which lasted only a few hours. The fourth patient had an urticaria which lasted for several days and was quite troublesome. There was no history of idiosyncrasy to iodides in any of these cases, but later developments proved that two of these patients were so sensitive to iodine that iodism occurred following preparation of the skin with iodine for surgical operation. In one of these four patients we have been able to continue treatments with iodized oil in small doses without further symptoms of iodism. We have had no deaths and no reactions severe enough to cause alarm. A reaction similar to that encountered in vaccine therapy with symptoms of generalized aching and chilliness followed by temporary fever occasionally occurs in some patients.

We have administered iodized oil to a few patients with a known susceptibility to iodine. We believe the greatest danger in such cases is in allowing the oil to enter the stomach either at the time of administering it or from the patient swallowing his sputum, and since failure to expectorate is a frequent habit with many patients, we caution any patient showing a bronchiectasis who denies expectoration. The oil is absorbed slowly, if at all, from the tracheobronchial tree and except in very susceptible individuals, the danger of iodism from this source is rather remote.

Numerous methods of administration have been published and several of these with modifications are practiced. We believe any method that combines safety, simplicity and certainty to be preferable. The supraglottic method which we have previously described fulfills these aims. Certain points in this method, we believe, are worthy of emphasis. This method requires no preliminary medication or preparation of the patient, no complicated apparatus and in our experience is safe. We find that spraying the pharynx with a 1 per cent solution of cocaine hydrochloride is adequate anesthesia with all patients. Many patients after the initial injection require no anesthesia for subsequent injections. Holding the tongue has been not only unnecessary but undesirable. We do, however, feel that it is important to observe the flow of oil into the larynx with the laryngeal mirror. This obviates the entrance of oil into the esophagus. The majority of patients are cooperative and find no difficulty in carrying out the instructions to keep the head still, the mouth open, to breath naturally and not to swallow. When the oil is being given for diagnostic lung mapping, the patients is further instructed not to cough. In all other instances whether or not the patient coughs makes no great difference. A five cubic centimeter syringe is used. This perhaps consumes a little greater time than the larger syringe previously used, but the rest period while the syringe is being refilled affords the patient an opportunity for relaxation, swallowing or coughing. We experience no difficulty in introducing the oil into the desired lung area by utilizing proper posture. When desirable to outline an upper lobe this can be accomplished by placing the patient on an examining table in a semi-reclining position and lowering the head, then turning the patient on the appropriate side immediately after introducing the oil into the trachea. This procedure is simple and can be readily carried out in the office.

In addition to other routine examinations, all patients are fluoroscoped both before and after administering the oil. If fluoroscopy and the X-ray are freely used one can determine the approximate amount, location and distribution of the oil in the tracheobronchial tree, but otherwise it is impossible to know that the oil has been introduced into the desired portion of the lung. We not infrequently observe a "piston-like" action of the oil in the bronchus with a varying movement of several centimeters distance. This has been described as a peristaltic movement, but we are not convinced that this is a correct explanation. We are more inclined to believe that air is trapped in the bronchus by a mucus plug or bronchial spasm, or a combination of these factors, causing a movement of the oil toward the trachea during expiration and away from the trachea during inspiration and usually disappearing in a few seconds as the oil traverses the bronchus.

Therapeutically, we have used iodized oil in acute, sub-acute and chronic pulmonary conditions. The acute respiratory condition—tracheobronchitis—responds favorably to the oil and most patients so treated are enthusiastic because of the relief obtained. About 50 per cent of these patients have infection of the nasal accessory sinuses which necessitates local treatment. Of the chronic lung conditions, bronchitis, bronchiectasis and bronchial asthma constitute the bulk of patients who will be benefited by treatment with iodized oil. Patients with hypertrophic emphysema, pneumoconiosis, and

patients with extremely sensitive bronchial mucosa of an allergic nature have not been treated as we have not felt that the oil was indicated in the treatment of these conditions.

In the last five years we have used the oil in the treatment of two hundred and fourteen patients whose chief symptoms were asthmatic breathing. Of these two hundred and fourteen patients, one hundred and five had intractable bronchial asthma. The remaining one hundred and nine had what we classify as asthmatic bronchitis. Many of the patients in both of these groups showed evidence of bronchiectasis. Response to treatment was about the same in each of these groups and differs very little from the results obtained in patients with chronic bronchitis and bronchiectasis without asthmatic symptoms.

In 1933 we reported our experience in the treatment of one hundred and forty-two patients with iodized oil. Our results with these patients were classified as markedly improved or cured 58 per cent, slight to moderate improvement 33 per cent, and failures 9 per cent. It is interesting to note that in reviewing our subsequent experience during the past four years our results have been strikingly similar. Our complete failures, or those patients showing no favorable response, constitute approximately 9 per cent of the total number of patients. Of the group of patients seen in the past four years, 60 per cent have shown what we have considered a marked improvement or a cure. The remaining 31 per cent have shown from slight to moderate improvement. In analyzing the cases of bronchial asthma the results are comparable to those of the group as a whole, the percentage of failures being almost identical.

CONCLUSIONS

After twelve years experience with more than six hundred patients who have been given more than ten thousand intratracheal injections of iodized oil we are convinced that the dangers attending the judicious use of this procedure have been over-emphasized. However, it should not be used indiscriminately. We have encountered ten reactions but none of these has been alarming and we have had no fatalities. We have never seen it unfavorably influence a chronic tuberculous process although we have used the oil in numerous such cases. We feel that iodized oil is an invaluable agent in the treatment as well as in the diagnostic study of various pulmonary conditions.

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801 Professional Building.

FRATERNAL COOPERATION.*

P. ST. L. MONCURE, M.D.,
Norfolk, Virginia

Members of the Seaboard Medical Association, visiting guests, ladies and gentlemen:

An honor was bestowed on me at Tarboro last year in choosing me as your president, for which I am deeply grateful.

The physicians of two great Sister States are

*Presidential Address delivered before the Seaboard Medical Association of Virginia and North Carolina at Virginia Beach, Va., December 7-9, 1937.

gathered together tonight with a feeling of brotherhood to endeavor to advance the science of the healing art for the benefit of suffering humanity.

Chas. Gordon Heyd, said: "The purpose of all social and medical organizations is to improve conditions under which society lives; and to make life easier in usefulness and contentment."

This Society, as indeed many medical societies, has been accused of being an advertising scheme for the benefit of a few specialists, a kind of get-together where those who are business-minded can advertise their wares. I do not see it that way. If it can make better business, if it can teach us better medicine and surgery, if it can stimulate in us greater efforts to do more for our sick and suffering patients, they may call it advertising or anything else they please. But I say this is a great educational body—with higher aims than business. To quote from the late W. F. Drewry, in his presidential address before the Medical Society of Virginia some years ago: "The profession of medicine is essentially altruistic in character." It stands for something more than the mere *science* of medicine and surgery in the treatment of disease. It stands for the prevention of disease, it teaches the laws of hygiene in all its branches, mental and moral hygiene, physical hygiene or cleanliness of the body, it teaches the laws of contagion and quarantine, cleanliness of our cities and towns and our whole country.

It teaches *Medical Ethics,* that branch which treats of the principles of good living—morality—and our duty to our fellow practitioner—in fact, our duty to all humanity.

Right now one of the principal worries we are having embraces *Medical Economics.* The recommendation made to the House of Delegates of the American Medical Association in a speech by Senator James Hamilton Lewis, of Illinois (*Jour. A. M. A.,* June 26, 1937), proposing an amendment to the Social Service Act, whereby the whole medical profession would be put under control of the Federal Government, should be pondered by every physician in the United States, and should bring the question to his own home, in order to ask himself what he should do about it. I will say in commendation of the report of the committee on Medical Economics of the Medical Society of Virginia—which committee, by the way, was headed by an ex-president of this association—that a most lucid report was made to the society, condemning in no uncertain terms such an amendment as proposed. Needless to say this report was adopted unanimously.

Hospital and medical care of the indigent and semi-indigent sick is a function of our fraternity, and must be worked out by our profession.

These questions cannot be worked out by science alone—they are not strictly scientific questions—but by fraternal co-operation between physicians, hospital boards or management, social welfare agencies, health boards, etc., and even when necessary through State and National legislatures.

And that brings us to the subject of my paper—

FRATERNAL COOPERATION

"For the miseries of the world science is the only true remedy; it is the only true charity."

Let us go back into our history for a few minutes to show that our great scientific fraternity is not only one of the oldest but also one of the closest of all time.

It has been said: "The history of medicine is the history of mankind, and in the study of it we gain an inspiration and a hope for the future of our race." We need not go back to Aesculapius, the legendary Greek god of medicine, the son of Apollo and the nymph Coronis, whom Homer, however, speaks of only as a skilled physician, but only to Hippocrates (460-377 B. C.) believed to be either the 17th or 19th in direct descent from Aesculapius. Much of the medicine attributed to Hippocrates, it is believed, was practiced befor his time, but it was collected by him and by *his school* (or society). One of the most famous writings of Hippocrates is "The Oath," and it is as alive today as when written 2,200 years ago, and by means of it the traditions in ethics are handed down to those entering our fraternity today

I will not read the whole oath as translated from the original Greek, but as the Hippocratic Oath still plays a part in medicine worthy of emulation, Columbia University administers the following oath —which is nothing but that of Hippocrates brought down to date—to its graduates in medicine each year.

"To the Candidates for the Degree of Doctor of Medicine. "You do solemnly swear each man by whatever he holds most sacred, that you will be loyal to the profession of medicine and just and generous to its members; that you will lead your lives and

practice your art in up-rightness and honor; that in what so ever house you enter it shall be for the good of the sick, to the utmost of your power, you holding yourselves far aloof from wrong, from corruption from the tempting of others to vice; that you will exercise your art solely for the cure of your patients, and will give no drug, perform no operation for a criminal purpose, even if solicited, far less suggest it; that what so ever you shall see or hear of the lives of men which is not fit to be spoken, you will keep inviolably secret. These things do you swear? Let each man bow the head in sign of acquiescence. And now, if you shall be true to this, your oath, may prosperity and good repute be yours; the opposite if you shall prove yourselves forsworn."

The Hippocratic Oath is the pledge of our great fraternity. It dates back 400 years before Christ, and though subject to some minor changes it still stands as our creed.

Time will not permit me to touch even on the high points of our history down through the ages. It may be divided into five epochs or periods: 1. Prehistoric, or mythical (to 400 B. C.); 2. Greek and Roman (to 476 A. D.); 3. Medieval (to 1493); 4. Philosophical (to Pasteur, 1822); and 5. Scientific (to the present).

The chief glory of medieval history of medicine was the organization of hospitals and systematic nursing of the sick, and these had their origin in the teachings of Jesus Christ. Yes, Christianity has done more for the restoration of health than anything on earth.

And now, a word for our Association: First, the A. M. A. What is it? A federation or union of the societies of the several states. Its object: To promote the science and art of medicine and for the betterment of health. I need not go further into the State and District, nor the special societies, they all stand for the same principles.

Fraternal cooperation is the spirit of them all. With it, we can accomplish anything we want; without it, nothing.

It is apparent from these few points I have touched on, from the dawn of medicine to the present, that it has always been an association of scientists, above politics or religious creeds, and independent in thought; knowing no country or race, but embracing all countries and all races and tongues with only one object in view—the *Search for Truth*. The whole medical world is but one great fraternity held together by the bonds of science, morality and virtue. Hippocrates required his pupils when finishing their course under him to subscribe to his oath before going out into the world to battle with disease. Columbia University and other schools of medicine have introduced the same oath. I would amplify the same oath and have the addition read as follows:

1. Make honor and duty the beacon lights to guide us over the stormy seas of time.

2. Do that which is right to do, because it is right—not for personal aggrandizement.

3. Weigh our renumeration by the circumstances by him who pays it.

4. Never consider our charity expensive if a worthy person be the receiver.

5. Do nothing for opinion's sake, but everything for conscience.

6. Be charitable to our enemies, for by doing so we often make them our friends.

7. The physician should be an outstanding citizen. He should love his country and work unselfishly for her honor, and obey her laws.

8. He should avoid inscribing his name on the transactions of his service to the poor and needy.

To quote: "He who industriously sows and reaps is a good laborer and worthy of his hire. But he who sows that which shall be reaped by others, by those who will know not of and care not for the sower, is a laborer of a nobler order, and worthy of a more excellent reward."

In choosing this profession an individual assumes an obligation to conduct himself in accord with its ideals.

Taylor Building.

XUM

PRENATAL CARE.*

T. J. WILLIAMS, M.D.,
University, Virginia.

It is generally agreed that many maternal deaths could be prevented by adequate medical supervision. In accordance with the old adage that prevention is better than cure, premarital and preconceptional examinations are valuable and will often prevent subsequent catastrophies. It is better to have discovered certain abnormalities and disorders prior to the onset of a pregnancy, and either correct the disorder or avoid the hazard of a pregnancy. Such conditions as nephritis, hypertensive vascular disease, heart disease and tuberculosis may temporarily or permanently contraindicate pregnancy, and are preferably recognized prior to conception.

Medical supervision after the occurrence of pregnancy is in line with preventative medicine and periodic health examinations and is necessary for a considerable proportion of women if they are to avoid calamity, and is helpful to all. That it plays an important role in the reduction of maternal mortality is generally accepted and amply proven. The reports of Calvert,[1] Rothert,[2] Wilinsky,[3] and Miles[4] in analyzing the maternal deaths of several states show that a large percentage of mothers dying in childbirth had no prenatal supervision. The Federal Survey of Maternal Mortality[5] in fifteen states shows that 54 per cent of those who died had no prenatal care, about 24 per cent had poor care, 9 per cent indifferent care, 12 per cent good care, and less than 1 per cent adequate prenatal care. It would seem obvious from these figures that adequate antenatal care is a factor commonly lacking in the fatal cases.

For various reasons, especially costs, distances from available facilities and the lack of appreciation of the value of prenatal supervision by expectant mothers and an occasional physician, many pregnant women receive no prenatal care. It would seem the privilege of every expectant mother to have proper antenatal, intranatal, and postnatal care, but the problem of furnishing facilities for adequate care to all women regardless of financial ability and distance from clinics, hospitals and physicians has offered many difficulties. Pregnant patients may be divided into four general groups: the clinic group, the rural group, the great middle class, and the "well to do". The "well to do" group offers no particular difficulty because they are in position to select their choice of attendants and facilities. The great middle class are usually cared for by the general practitioners, and efficient care for this group is simply a question of the obstetric ability, education, enthusiasm, interest and training of the practitioner. The clinic patient is cared for by the free or low cost clinics, and her problem is fairly well solved if she lives in a reasonable distance of a clinic. The rural indigent group has offered the most difficult problem. To educate this group to the need of prenatal supervision and to the appreciation of obstetrical hazards, and at the same time to have facilities available for their care, has been one of the major problems of those interested in maternal welfare.

It was with this group in mind that Federal funds have been made available under the social security legislation for maternal and child health in the rural areas. Virginia is cooperating through its State Department of Health in this program and prenatal clinics have been established for the indigent rural patients in various sections of the State under the medical direction of local physicians in cooperation with the officers of the State Board of Health. As a part of this same program, postgraduate or "refresher" courses in Obstetrics are offered to physicians in rural localities. This course is now in its second year and is available to physicians in the rural areas who desire it.

Practitioners who attend pregnant patients must remember that routine care during the antepartum period is essential. If a physician accepts maternity cases he should accept the entire responsibility. If the patients are unable to recompense him sufficiently for the many necessary services, and if he is unwilling to contribute his services, he should direct them to other sources where they may have the care that every pregnant woman needs. Physicians cooperating with the prenatal clinics must realize the importance of adequate examination and close supervision. The value of prenatal care will vary directly with the grade of supervision given.

*From the Department of Obstetrics and Gynecology, University of Virginia.

Read at the sixty-eighth annual session of the Medical Society of Virginia, Roanoke, Va., October 12-14, 1937.

The Children's Bureau[6] has described standards of prenatal care which depend for their classification upon the period of pregnancy at which supervision begins, the examinations that are made and the regularity of the examinations. Arbitrarily the supervision was divided into three grades: Grade I—(a) adequate, (b) good; Grade II—indifferent; Grade III—poor. Physicians supervising pregnant patients should strive to render all of them Grade I—(a), or adequate prenatal care.

Adequate prenatal supervision should begin in the second month of the pregnancy. At the time of the first visit a complete history should be obtained, a complete physical examination done, and all facts recorded in a permanent history. The examination should include an examination of the teeth, mouth, thyroid, heart, lungs, blood pressure, breasts, abdomen, urine, blood studies including blood Wassermann, pelvic measurements (internal and external) and vaginal examination. Any abnormal findings must be interpreted in the light of their possible effects during pregnancy, labor and puerperium. The patient should be seen at monthly intervals during the first five months, and once every three weeks during the sixth and seventh months, once every two weeks during the eighth month and weekly during the last month. At the return visits any symptoms should be noted, the weight recorded, the blood pressure taken, the urine examined and the abdomen palpated. Additional examinations should be made and former examinations repeated as conditions require.

At the first visit the patient should be instructed regarding her diet and general routine of life. Ordinarily a varied diet consisting of proteins, fats, carbohydrates, vitamins and minerals should be advised. It should be sufficient to build up the tissues to full strength and to accomplish this without producing a marked storage of body fats. The minimum protein requirements must be maintained, and there is no reason why a normal pregnant woman should not eat meat in moderation notwithstanding an old superstition to the contrary. A much more sensible precaution is the limitation of salt, highly spiced foods, rich foods and indigestible foods. Some limitation of fats and carbohydrates to prevent excessive gains in weight is a wise precaution although there should be a sufficient amount of these substances in the diet to furnish necessary energy. The diet should be rich in fruits and vegetables and desserts should be of fruit rather than pastry. A minimum of six to eight glasses of fluid should be taken daily. Milk is an invaluable food during pregnancy and at least three glasses of skimmed milk should be included in the daily diet. In addition calcium and cod liver oil in some form might be administered.

Advice regarding exercise and rest should be given and it is safe to advise a moderate amount of outdoor exercise which should not proceed to the point of fatigue. Activity should be interspersed with periods of rest, and it is advisable for the patient to be at rest for at least two hours some time during the day. It is essential that satisfactory bowel elimination during pregnancy be maintained either by diet, exercise or laxatives. The teeth should be examined twice during the pregnancy by a dentist and any necessary dental work performed. Tub baths and sexual intercourse should be interdicted during the last six weeks of the pregnancy.

The common complaints and abnormal findings during the prenatal period should receive proper consideration. Advice regarding the nausea and vomiting of early pregnancy is usually helpful. Frequent small high carbohydrate feedings and mild sedation often give reasonable comfort. Hospitalization should be instituted early in the severe or pernicious cases of vomiting. The blood examination may reveal some anemia of significance which should be treated by iron in adequate dosages. The presence of syphilis or a positive Wassermann reaction is an indication for immediate and active antiluetic therapy as adequate antisyphilitic therapy early in pregnancy usually preserves the health of the infant. Cardiac disease discovered during pregnancy requires unusually keen interpretation to determine the advisability of continuing the pregnancy. The opinion of a cardiologist as to the functional capacity of the heart in cases of heart disease or suspected heart disease is advisable. As a general working rule, however, if there has been a history of previous cardiac failure, pregnancy and labor are apt to produce sufficient strain to precipitate another attack of decompensation, often with a disastrous outcome. Tuberculosis complicating pregnancy offers a problem which requires a nice decision and while opinions are somewhat at variance at present regarding the correct attitude and the proper treatment of pregnancy with tuberculosis, each case should be individualized and the course pursued which seems

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to be the wisest for that particular individual. However, practically everyone agrees that the tuberculous individual should avoid pregnancy until the tuberculous lesions have become inactive. Pelvic tumors complicating pregnancy should be detected during the antenatal period by abdominal, vaginal, or rectal examinations, so that the appropriate treatment may be carried out at the selected time. Congenital anomalies of the vagina, cervix, and uterus should also be detected during the pregnancy, their possible effects at the time of labor determined, and the correct method of delivery decided upon before the onset of labor.

Pelvic mensuration may reveal the presence of pelvic contractions. The advantage of the recognition of an abnormal pelvis before the onset of labor cannot be over-emphasized, as that is the time to decide on the proper mode of delivery. Hospitalization is indicated where there is any question of significant pelvic contraction. On the other hand, the practitioner should not place too much reliance on external pelvic measurements. The significant measurements are the diagonal conjugate for the anteroposterior diameter of the pelvic inlet, and the bisischial and posterior sagittal diameters for the outlet. In cases of questionable pelvic measurements X-ray pelvimetry may afford additional and often more accurate information. It is to be remembered, however, that many factors other than mere pelvic size enter into the ease and safety with which vaginal delivery can occur. The size and presentation of the baby, the station of the presenting part, the shape of the pelvis, the general body configuration and muscle tone of the mother, and the condition of the soft tissues of the mother's pelvis are factors which may seriously impede labor in spite of an ample sized pelvis.

Important procedures during the prenatal period are blood pressure determinations, weight records and urine examinations, abnormalities in which may reveal an impending toxemia. A rapid sudden gain in weight is often indicative of an abnormal storage of fluid in the tissues. Patients with toxemias of pregnancy always require frequent and careful observation, and treatment by dietary limitation, rest and sedation should be instituted at the first evidence of trouble. Careful prenatal observations usually detect a toxemia and allow treatment to be instituted, and if necessary the pregnancy terminated before convulsions appear or irreparable damage to the renal or vascular systems occurs.

That this type of prenatal care with reasonable and intelligent interpretation of the findings and the prompt institution of the generally accepted treatment for the various abnormalities would reduce the maternal and fetal mortality is evidenced by the federal, state and municipal[7] surveys. Obviously, of course, antepartum care is only a part of complete maternal care, although it is frequently the most neglected part. Intrapartum care and the actual confinement are the most critical and important parts as far as the possibilities of serious results for the mother and the baby are concerned. In order, however, to render intelligent care at the time of labor, it is essential that something of the previous and present physical condition be understood. To be forewarned is to be forearmed. Elective procedures may be instituted and many emergencies of labor avoided by proper antenatal examinations. To expect prenatal care to completely abolish maternal and fetal deaths is, of course, ridiculous, but careful examination and supervision during pregnancy and reasonable interpretation and treatment of abnormal conditions in an early stage will surely reduce the number of calamities.

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DISCUSSION

DR. A. M. GROSECLOSE, Roanoke: In discussing a paper so complete as Dr. Williams' one can only emphasize some of the things he has brought out. Preventive medicine plays no greater part in any other branch of medicine than in obstetrics. Within the past few years, although the mortality in the Birth Registration Area is still staggering, there is no question that great advances have been made. These advances have chiefly been made in thickly populated sections. There has been some improvement in the rural areas, but I think our chief problem in the

rural areas and the less thickly populated sections is education of the public. The doctors, as a rule, are willing to give patients prenatal care if they will ask for it. Most of the patients in the rural areas think that if they carry a specimen of urine to the doctor it is all that is necessary. If they examine a specimen at intervals and cannot see the patient they might prevent an occasional case of toxemia, but certainly just a specimen of urine is very inadequate.

Several years ago we had quite a number of cases with eclampsia, with convulsions, that were sent into the hospital. During the last few years that number has dropped off considerably. I think that means only one thing—that there is better prenatal supervision. Personally, I have seen no cases of convulsions in patients who had adequate prenatal care. I have seen plenty of toxemia but no convulsions. I have seen patients with badly decompensated hearts and other conditions, mostly in patients who had no prenatal care, most of which could have been prevented if those patients had had care early in their pregnancy. In the most thickly populated area it is surprising how many women come in demanding prenatal care. In a few years, depending upon the amount of education we can put over to these people, the more they are going to demand prenatal care; and it is going to be up to the doctor to take care of them.

HOSPITALIZATION BY THE GROUP PAYMENT PLAN ON A STATE-WIDE BASIS.*

R. W. GARNETT, M.D.,
Health Officer and Director of Public Welfare,
Danville, Virginia.

Of all the scientific discoveries and inventions marking the past half century, none are more significant to human welfare than those in the realm of medicine. Research is adding constantly to our fund of accurate knowledge, and sociology allied with preventive medicine is making great strides in adapting this new knowledge to human needs. Yet, we must still admit that there is very great need for continuing progress in working out plans to bring this new knowledge and the advantages of hospitals and medical service within the economic reach of a larger number of our population. "The public health" in the broadest sense has come to be a popular topic and newspapers and magazines are doing much to develop an intelligent popular interest. Hospitals are now being generally recognized as an essential feature of the set up necessary for the maintenance and promotion of good health—a tremendously important part of our modern social machinery.

With some two million people in the United States sick all the time with illness, much of which is preventable; with accidents, many of which are preventable, costing the United States annually more lives than did the World War; with cancer on the increase and also costing the United States more lives than did the World War; with appendicitis still ranking among the fifteen leading causes of death in spite of all our skilled surgical technique; with America still standing at the bottom of the list of twenty-six leading nations in its maternal death rate; with only 20 per cent of the American people receiving adequate dental care, it is manifest that we face a definite need for certain social readjustments.

Taking as an illustration the one item of maternal deaths, we find that Sweden lost only twenty-five mothers per ten thousand living births in 1935, while the United States lost fifty-eight women per ten thousand live births. By way of contrast, then, with the figures of some other countries, it is very evident that many of our people are failing to receive the full benefits which modern science makes available but which unfortunately are often out of their economic reach.

The average citizen now knows about laboratory tests and basal metabolism and X-ray examinations and the advantages to be gained from modern surgery, and he knows that these things are costly. With his large family and small income, the cost of these benefits often appear to him to be exorbitant. When accident or serious illness make hospitalization necessary he may find it very difficult if not impossble to pay the bills. It is a well-known fact that many people postpone seeking needed hospital and surgical service on account of the cost. While it must, of course, be recognized that other groups, philanthropic and governmental, are often responsible for providing hospital facilities, yet the majority of people look upon the problem as medical and depend upon doc-

*Read before the sixty-eighth annual session of the Medical Society of Virginia, at Roanoke, Va., October 12-14, 1937.

tors to do the planning as well as to supply the scientific knowledge and technical skill needed for treatment or prevention of disease. A study of these facts, then, indicates that while the progress made in the science and technique of medicine has been spectacular, we have been slow in making those social and economic adjustments needed to bring the full benefits within the economic range of the low income groups of our people.

According to the report of the Committee on the Cost of Medical Care, there are in the United States about 150,000 physicians, 70,000 dentists, 200,000 nurses, 7,500 hospitals, 6,000 clinics and 60,000 drug stores; all concerned in furnishing care and medicines, with some $5,000,000,000 invested in hospitals, clinics, laboratories and in the private offices and equipment of physicians and dentists.

The cost of medical care is of interest to every housewife who is trying to plan the family budget, to every man trying to pay his way while he is well and meet his bills when he is sick. Authorities tell us that for adequate hospital care for the people there should be at least one bed to every 150 of the population. Here we find that there is great inequality of distribution, so that, while certain medical centers may have reached this ideal, yet in the rural sections and in many states the number is far short of this ideal. With one physician to every 866 persons of our 130,000,000 and one hospital to every 17,000 people, it would appear on the surface that Americans are amply supplied with both physicians and hospital service. Yet, when we consider the fact that in Mississippi, for instance, there is only one hospital bed to every 1,054 of the population, and when we consider the meaning of the fact that in many large rural areas there is no physician, the pertinent question does rise: do our people as a whole have adequate medical care? Manifestly, the difficulty is largely economic and due to lack of planning and organization.

Due to an ever increasing awareness on the part of the average citizen and to the increasing concern for his welfare manifested by our leaders in government, medicine is being socialized whether we like it or not, a fact which should be looked upon not so much as a cause for alarm as a challenge to the best leadership of the profession. That one-third of the American people are ill-fed, ill-clothed and ill-housed, to quote the President's phrase, is calling also for a further degree of protection from preventable disease and for a fuller share in the benefits to be gained from more complete use of scientific knowledge.

The extension of the insurance principle into many phases of our modern life has given rise to a very significant movement known as "Hospitalization by the Group Payment Plan". This appears to be the most practical and timely movement growing out of the study made by the Committee on the Cost of Medical Care, and when based on wise judgment and sound principles is proving a success in many American cities. Initiated at Baylor University Hospital in 1929, primarily for the benefit of 1,500 teachers, the movement has rapidly spread until now it is in operation in over sixty American cities. As developed in this country there are certain definite principles which appear to be sound and in keeping with the best sociological thinking.

While no one person can predict how much hospital care he will need during a given year, experience indicates that it can be determined by mathematical processes with a striking degree of accuracy, how much will be required by a large group. For example, 5,000 people from the experience of other groups over a period of years, might determine that $30,000 worth of hospitalization would be needed annually. Then, each of the 5,000 by paying fifty cents per month into the common fund would be insured hospital care without further cost in case of need. This method of removing the economic hazard from hospitalized sickness is not just an idea but an accomplished fact for over a million and a half employed persons in the United States. Over 5,000 hospitals are participating in this rapidly growing movement.

The American Hospitalization Association after a careful study has endorsed the principle of group hospitalization. Similar action has been taken by the American College of Surgeons. The American Medical Association, while it has not officially endorsed or approved group hospitalization, has established a group of principles to guide those who are interested. All of these organizations warn against certain errors likely to be made in developing plans of this nature. While considerable variation in detail may be noted in the different plans in use, the principles involved are the same. These principles as set forth by the American Hospital Association in 1933 consist of:

(1) Emphasis on public welfare;

(2) Non-profit sponsorship and control;
(3) Enlistment of professional and public interest;
(4) Free choice of physician and hospitals;
(5) Economic and actuarial soundness;
(6) Limitation to hospital service;
(7) Dignified promotion and administration.

A fairly typical procedure for the formation of a group hospitalization plan may be outlined as follows:

The first step is discussion by the legitimately interested group concerned with the public welfare. Information should be obtained from all possible sources and legal guidance secured in order to make any contemplated plan meet the requirements of the law. Full data on the subject has been compiled by the American Hospital Association of which C. Rufus Rorem is Director. According to such a typical plan set forth by the American Hospital Association, special emphasis is laid upon free choice of both hospital and physician and upon a non-profit or non-commercial set up. Such a hospital service or hospital association enters into contract with subscribers who make equal and regular payments to a common fund which is used to pay for necessary hospital expenses for subscribers and their dependents. The corporation also enters into contract with participating hospitals which provide certain services to subscribers and rely on the association or corporation for payment of bills.

Experience shows that about one member of such a hospital association out of twelve will actually require hospital service during the year.

On July 1, 1937, there were thirty-three plans operating in this country, covering 619,223 subscribers and 967,427 dependents, a total coverage of over one and a half million persons. No two of these plans are exactly alike.

The Richmond Hospital Association, with Mr. M. Haskins Coleman as General Manager, was established in January, 1936. It is non-profit, has eight participating hospitals, of which six are privately owned. Subscription cost or enrollment is $1.00, monthly rates are 85c for employed subscribers; for a subscriber and one dependent $1.50; with two dependents $1.75; subscriber, wife and dependent children $2.00 monthly. Hospital benefits are twenty-one days' care in semi-private room including bed and board; general nursing care, complete laboratory service, operating room, delivery room, anesthesia, routine medicines, dressings, maternity care including baby (after ten months' membership of mother). Dependents receive same care as employed subscriber. Emergency care anywhere paid a maximum of $6.50 per day not to exceed twenty-one days. An allowance of $4.50 made toward the purchase of private accommodations.

This Richmond plan, as carefully worked out, is apparently succeeding splendidly and might well serve as a model for other cities or for the State as a whole.

North Carolina has, already operating, two associations on a state-wide basis. Alabama has a state-wide plan. Maryland, New Jersey and Minnesoto are working toward the development of state-wide plans.

In my opinion Virginia might well build on the experience of these states, and of Richmond and Norfolk, its largest cities, in order that the benefits of group hospitalization may be extended to all Virginia people and to all Virginia hospitals caring to participate. Surely we have philanthropically minded citizens who might underwrite a sound plan if it were properly explained and endorsed by the State Medical Society and other organizations concerned in seeing more adequate hospital service brought within the reach of a larger proportion of our population.

I would suggest, therefore, that a motion for such endorsement in principle be entertained during this session of the Society and that a special committee be set up to further study this important subject with a view of determining next steps.

DISCUSSION

DR. FREDERICK P. FLETCHER, Richmond: I think it behooves physicians to be very cautious about the *means* we endorse toward the *ends* we all are working for. The prevention of disease, and its cure when it occurs, the alleviation of pain, the promotion of public health in general—on these desirable objects we all agree. But is state-wide socialized medicine a desirable and effective means to this end? Personally, I doubt it and I believe every man in this audience will agree with me on that.

Dr. Garnett is correct in stating that many people postpone hospitalization. It has been authoritatively estimated that 50 per cent of the people from the low and medium income groups delay entering the hospital in order to save up money. We know that delay in taking care of illnesses invariably makes you a sicker patient, a longer illness slows recuperation, and results in greater cost, increased economic loss and a higher death rate. It should further be borne in mind that the cost of hospitalized illness forces between 35 per cent and 40 per cent of admitted patients

to call upon their physician to compromise with his good judgment, and the patients best interest, by allowing them to leave the hospital sooner than they should in order to save them a few dollars.

Dr. Garnett is also correct in stating that the medical profession should take the lead in making those social and economic adjustments necessary to place the best of medical and hospital care within the reach of the low income groups. If they do not take the lead it will soon be forced upon us in a way outside of our control. This was evidenced in the last Congress by the number of bills introduced whose purpose was to solve the cost of medical care for the masses. Don't think, gentlemen, that this administration is responsible for these bills. As a matter of fact, most of them were introduced by anti-administration members of the House and Senate.

We have permitted the American Hospital Association to advance the only constructive program for the control and prevention of Socialized Medicine. I refer to the "Group Payment Plan for Hospitalized Illnesses." The response of the people wherever a plan is inaugurated is evidence of the desire of the medium and low income groups to pay for their own sickness expense. It has been noted in many cities where these plans are operating that medical expense is paid more readily because there was no hospital bill to pay. The soundness of these group non-profit community plans is sufficient evidence that the principle is sound.

Hospital Service Plans are today operating in Danville, Norfolk, Richmond, Portsmouth, Roanoke and Southwest Virginia. Scott County has a plan with Kingsport, Tenn. Galax, Grundy, Lynchburg, Alexandria, and the Peninsula cities are contemplating Group Hospitalization at the present time.

Dr. Garnett suggests a state-wide group hospital plan such as operates in North Carolina and Alabama. It is doubtful if such a plan could function in Virginia, without an enactment of the Legislature, amending the State Insurance law, to specifically permit the operation of a non-profit, state-wide, hospital service plan.

At present, the hospital service plans operate under the supervision of the Securities Division of the Corporation Commission, and each plan is specifically designated as agent for the hospitals participating in the community. The contract for hospital care is made between the hospital and the subscriber, with the Service Association acting as sole agent for the offering of the contracts.

A state-wide plan should be carefully considered. Should a committee be appointed to study such a plan, their first problem would be to wait on the Corporation Commission for their ruling, as to whether or not it would be possible under the Securities Division. Should the Commission rule that a state-wide plan would have to operate under the Insurance Commission, then it would be necessary to arrange for the deposit of $10,000.00.

DR. WALTER B. MARTIN, Norfolk: I have been interested for a number of years in some of the problems connected with the social aspects of medicine, and for the past two years have been on the Board of Directors of the Tidewater Hospital Service Association. I strongly approve of group hospital insurance as it has been developed in certain localities, but I doubt the wisdom of applying this plan on a state-wide basis.

Only a few years have elapsed since any of these plans have been in operation. We have not yet acquired sufficient information to foresee all of the possible dangers and pitfalls that may be encountered. As the various local organizations develop and extend their influence, we will acquire a better insight into the problems connected with group hospital insurance. We have a tendency in this country to feel that if a thing is theoretically good, we should have it tomorrow. We must hasten to the millenium, and every one else must hasten with us. In this instance, I believe it is wise to make haste slowly. We have yet to find out from experience what our rate of hospitalization will be over a period of years. We have acquired some information on this point as applied to wage earners, but, as we are just starting a family plan, we still know little about the rate among dependents. Local conditions vary, and somewhat different plans may be suitable for different areas. It may be quite difficult to work out a system that may be applied uniformly to a number of localities.

Local control of these organizations seems to be most important. If they are to serve their purpose, over-head must be kept low and chiselers should be kept out. For this reason, contracts should be simple and as free as possible from exceptions.

The organizations should be administered by a local board capable of broad-minded interpretation of the contract. In a state-wide plan, the organization would from necessity be under the direction of a central director or board, and the varying needs of different localities would be poorly understood. Rather than embark on a state-wide plan, it would seem advisable to encourage the development of local groups with the purpose of the union of these various groups into a state-wide organization.

DR. G. F. SIMPSON, Purcellville: The doctor is charged on all occasions with furnishing adequate medical care to our citizens. If the patient is a woman who is going to be confined, living in a modest home, who calls one of the general men practicing medicine out in the mountains of Virginia, after she knows or thinks she is pregnant, and he looks after her carefully, examines her urine once a month, watches over her, bringing her up to term, when he goes into that home and delivers her of a normal baby, without mortality or morbidity, is that patient getting adequate medical care? Is it essential to institute that patient in a hospital? All of your plan looks to the building up of the hospitals and the institutions and favoring a group of favored citizens, and I think I can conscientiously say this, as I happen to be on the board of directors of the Loudoun County Hospital and vice-president of the organization. I am speaking from facts.

I am going to read you what your economics will mean to the State of Virginia, in the interests of the citizens of Virginia, and not in the interests of any plan.

RICHMOND, VA., MARCH 25.

Approximately half of the white population of Virginia occupies the economic status of peasants, and of

these thousands may be classed as submarginal, according to Dr. W. E. Garnett of Virginia Polytechnic Institute.

Writing in the current issue of the *Virginia Journal of Education*, Dr. Garnett declares that the whole cultural level of the State is depressed by this marginal population, now estimated at 550,000 white persons and 325,000 colored—875,000 in all.

He classed as marginal those persons whose gross annual income is less than $600 in normal times, who have less than a fifth-grade education, who have poor housing and other living conditions, and who pay little or no taxes.

Of the 550,000 white persons falling in this group, he says 150,000 are poor mountain people, 118,000 white tenants, 164,000 white hired laborers, and 118,000 white marginal farm owners and marginal non-farm rural people not included in the other groups. There are probably 250,000 children among these families, the writer says.

Dr. Garnett asserts that these people account for Virginia's ranking of thirty-sixth among the States in per capita wealth, thirty-ninth in per capita income, forty-fourth in "significant educational conditions," and thirty-second in gross income per $1,000 of farm-property investment.

Now, members of the Medical Society of Virginia, add the 875,000 marginal citizens and the 250,000 children, and you have 1,125,000 people who cannot avail themselves of any form of insurance. We have in the State of Virginia today two million and some odd thousand citizens, and your plan is doing something for the people who are already in position to take care of themselves, and that shows the superficial consideration that is given these suggestions for the health and welfare of the people. There is a quotation you all know,

> "Ill fares the land to hastening ills a prey,
> Where wealth accumulates and men decay."

We have a wealth of scientific information, but have not the men decayed who should use that for the purposes that we are trying to accomplish?

DR. GARNETT, closing the discussion: I wish to thank these gentlemen for their very generous discussion and their criticisms, both adverse and favorable I think the thought Dr. Martin expressed, that five years or even longer would be required, is a very modest statement. In North Carolina, where two state-wide plans are apparently successfully working, they have been planning and working for group hospitalization much longer than five years. I think such plans have to be thought over and discussed a great deal before a final decision can be reached, but to have the Society begin to think of them, at least, this year will do no harm.

MENTAL HYGIENE CLINICS IN THE COUNTIES—AN ANALYSIS OF 120 CASES EXAMINED IN 13 COUNTIES DURING 1936-37.*

JAMES N. WILLIAMS, M.D., DIRECTOR,
Bureau of Mental Hygiene, State Department of Public Welfare
Richmond, Virginia

Within the past decade we have witnessed a marked increase in mental disease and criminality which has not yet reached the peak of expectancy. Estimates from authoritative sources are in accord in this regard, and hospitals for the care of the mentally ill are being enlarged. At present it is estimated that two hundred million dollars of public funds are being spent annually for the care of mentally diseased patients and in the future the amount needed will be more than twice this figure.

The State Hospitals have been crowded for years and it is necessary to constantly make additions in order to provide for ever increasing numbers of admissions each year. During 1935 there were about 12,000 patients in the five State Hospitals, which is an increase over previous years and substantiate the fact that there is an increase of mental disorders. There is also an actual increase in the functional mental disorders such as the psychoneuroses. These require treatment, and although they do not reach the Hospitals of the State, yet they are costly since the earning power of this group of individuals ceases for a period of time. If we could estimate the cost of these functional disorders in addition to that of the psychoses, it would make our national debt seem small.

In addition to the above, we must consider another problem which is just as important, namely, juvenile delinquency. The so-called "depression children" are beginning to attract attention by their anti-social conduct which is a result of the poor environment in which they were reared. These children

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did not receive the necessary training in the home as the parents had to neglect them in their effort to obtain the bare necessities of life.

In many instances the homes were broken and the children cast upon the community. Thus, they had to rely upon instinct for preservation and fear took the place of understanding. As a result of this situation the juvenile courts were filled with cases involving children who were arrested for stealing, housebreaking, murder, truancy and sex crimes. Last year it was estimated that juvenile delinquency cost the public four or five billion dollars, yet only a few constructive methods were advanced to prevent this great loss. Punishment, which is costly, has produced little result and in many instances only incites some children to commit worse crimes later in an attempt to get revenge.

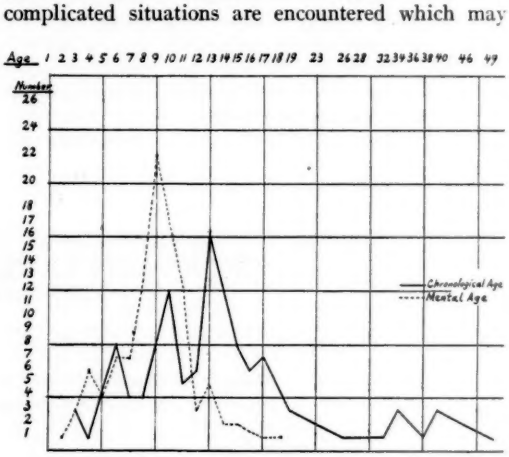
These boys and girls who are placed in jails and detention homes because of delinquency already feel rejected by everyone and then the feeling of persecution is added. To help such an individual at this time is difficult and requires a long period of care. With the present facilities it is impossible to do much constructive work as the group is too large and the bad habits or conflicts are deeply imbedded. The majority of lay people still do not understand that the conduct of these children is an outward expression of the conflicts which are taking place within and is not purposeless. To continue to try to repress these conflicts by means of threats of punishment results in disappointment and failure, whereas instead they should be offered healthful substitutes. By this means correction of bad habits may be achieved and these children will not encounter the courts or jails.

In an effort to educate the public and to demonstrate what can be accomplished by correcting difficulties in the incipiency, Mental Hygiene Clinics were held in thirteen counties during the year 1936-37.

Arlington County	8	cases
Buckingham County	6	"
Brunswick County	5	"
Charlotte County	7	"
Culpeper County	6	"
Dinwiddie County	45	"
Fauquier County	5	"
Gloucester County	13	"
Halifax County	4	"
Norfolk County	8	"
Rockingham County	5	"
Southampton County	3	"
Warwick County	5	"

In such instances the local Superintendents of Public Welfare requested that the clinic visit the county and examine a certain number of cases. A complete social history of each patient, including a statement of the problem involved, was obtained prior to the day of examination and a physical examination made by the local physician. Few of these patients could pay for medical care and the majority had been known to the local welfare agency for a long time.

On the prearranged day of examination, the staff of the State Mental Hygiene Clinic visited the county, spending the entire day, or if necessary two days, examining the most urgent cases. Each patient is given a psychological test and a psychiatric examination at this time. As a rule only four or five patients can be examined in a day as often very complicated situations are encountered which may require several hours' consultation before any satisfactory recommendations can be made. At the completion of the study of the cases a conference is held with the local worker and physicians interested, during which time there is a free discussion of each individual examined. Later a complete confidential report is sent to the Superintendent of Public Welfare, including the recommendations for helping the individual. Frequently it is necessary to visit the same county again and interview the same individuals before a satisfactory solution can be found, or in some instances it is arranged for the individual to come to Richmond for a more complete study.



Age Groups: In this group of 120 patients examined in the thirteen counties, the ages ranged from two years to forty-nine years. The chart shows the

distribution of patients according to age and it is noted that the majority are in the adolescent period ranging from ten years to sixteen years. This is to be expected as during this period of life many difficulties are encountered and if not adequately managed may cause more serious trouble later.

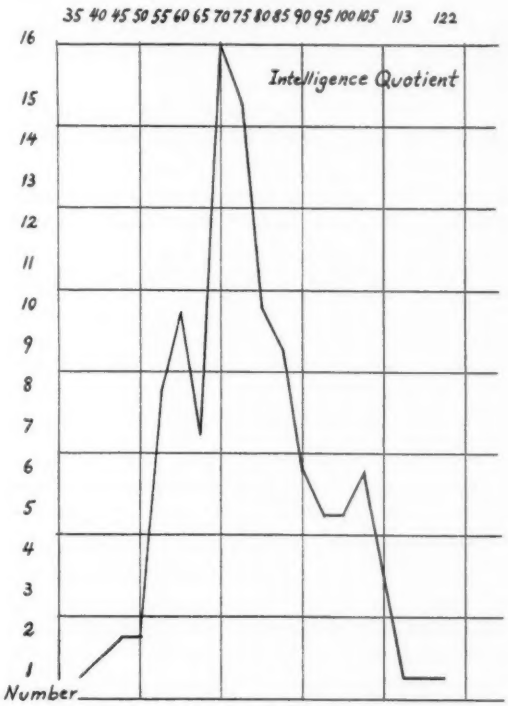
At this period the individual begins to show the early signs of anti-social conduct and more can be accomplished by instituting proper treatment than at any other time. This is preventive medicine and accomplishes more than treatment after the patient has a long record of misdeeds.

Home Situation: Much has been said about the influence of environment on the behavior of the individual but often this is not realized until the home is actually visited. Much more can be gained by a visit to the local community and the home of a patient that can be expressed in a history of any kind. This is one of the great advantages of these clinics and helps greatly in understanding the reactions of the individual. Whereas the examinations were not conducted in the homes, yet they were often visited by the clinic staff and other members of the family talked with about the patient.

The majority of the homes were classified as "broken" and this placed additional burden upon the remaining parent. In many instances the home was not actually "broken" but one or both parents alcoholic which caused many conflicts within the home. This condition not only produced emotional instability and insecurity but also a lowering of morals. Not infrequent were the recitals of fights within the home, the length of jail terms served by the parents and immoral practices of the parents or children. Most of these homes were of the marginal or submarginal type and partially or entirely dependent upon Relief. Frequently there was not adequate food so that the diet consisted chiefly of corn bread, coffee and molasses. Even in the rural sections milk was scarce and fresh vegetables were obtained only during several of the summer months. Clothing was also inadequate and it was not unusual for the children to remain away from school because they lacked the necessary warm clothing. Furniture was scarce and the little that was had was dilapidated. In one home, the mother and four children slept on one small bed.

In many instances relief was adequately administered to the home but the parents were not capable of managing it and consequently there was actual want all the time. As an example, in some cases a certain amount of money was given to the parent to supply food for a week and this money was spent in one day for candy, cake, etc., so that it was necessary for the children to beg on the streets. The general atmosphere of the homes is depressing and the occupants subdued, listless and wastrel. Therefore, they lacked the essential qualities of a home such as security, love, sympathetic understanding and parental guidance.

Intellectual Status: The Stanford Revision of the Binet-Simon Intelligence Test was used to determine the intellectual development of each individual in this group and the test was administered by a competent psychologist. The largest group of patients were in the borderline group. Only about ten patients were of normal intelligence in the entire group of 120 and many were definitely defective. The charts show the actual distribution according to mental age and also the intelligence quotient of these patients. This degree of mental retardation was not surprising in this group when the heredity and environment is considered, and it tends to substantiate previous studies. The limited mental capacity



partly explains the failure of adjustment of the individual and the inability of the children to do satisfactory school work. The parents of such children were retarded and unable to do anything but menial work.

Many of these children were forced to continue in school when they could not do the classwork and caused much trouble. They were teased by other children for being in the lower grades when they were much larger than any of the other pupils. Frequently they were promoted to the next grade only because the teacher wanted to get them out of her room, forcing the problem upon another. In these instances the need is for vocational training, and if this could be substituted for classwork there would be less difficulty.

To illustrate this point, a boy was an habitual truant from school and all efforts to make him attend school had failed. When at home he was industrious and a help to his father who had a farm. This boy had reached his limit in school and explained his problem by saying he "could not learn", but this truth was ignored by the school authorities because he was not sixteen years of age, at which time he would be allowed to stop school. Such examples are all too common and produce rebellious and anti-social individuals. These individuals could be given vocational training which would make them useful and often independent.

Physical Status: Physical examinations of this group of patients revealed that most of them were malnourished and focal infections were frequent, such as bad teeth and infected tonsils. Only one patient had a positive Wassermann. Several cases had mild rheumatic infections and three had had moderately severe head injuries some years previously. Undoubtedly these physical defects had a bearing on the individual's reactions and in each instance recommendations were made that it be corrected as soon as possible.

Psychiatric Status: It is difficult to describe all the various types of personalities encountered in such a group of individuals and only a few will be mentioned. The children showed marked evidence of insecurity and emotional instability. There was a feeling of inferiority and apprehension which could not be escaped. Certainly these children had every reason to feel this way as they were literally trapped by circumstances in an unwholesome environment and had to repress every emotion. Fear of parents, of school, and even existence dominated them so they acted involuntary. There was no one to encourage them or to supply the guidance which is so necessary during this period.

There were two children who showed a schizoid type of personality and will be continued under observation. One adult was definitely psychotic and institutional care was necessary. A recent report from the hospital indicates that he is making an adjustment. A post-encephalitic syndrome was encountered in several instances and believed to be the cause of the abnormal conduct. Endocrine dysfunctions, including such conditions as dwarfism, were noted which markedly influenced the individual's reaction to his environment. In the group as a whole there was a marked lack of adequate sexual understanding and especially in the children did this appear to be a factor which produced many conflicts. Most of these people had only crude and misleading ideas of sex which were gathered from the street corners. Proper instruction in these matters would help abolish many fears and also prevent difficulty later in life.

Reasons for Referral: There were three main reason for requesting study of this group: 1. Proper school placement of certain children; 2. Emotional difficulties, such as temper outbursts, incorrigibility, fears and family conflicts; 3. Advice concerning proper placement and training.

These individuals were not delinquent and, therefore, had no contact with the courts at the time of examination but study was made in an effort to help them adjust in society. Most of this group were potentially anti-social and, if allowed to continue, intervention of the law would be necessary. These facts were recognized by the local workers in most instances but the advice of the clinic was desired to ascertain the best method of treatment. In other cases the parents had asked for aid because they could not understand or cope with behavior problems of certain members of the family.

Advice of Clinic and Results: In each case specific and practical recommendations were made to the local worker. As an example, it was advised that the mentally defective individual be committed to the Colony for care and the child who had reached his limit in school should receive vocational training. When possible it was urged that the home remain intact and improved but if this was not practical it was advised that the members of the family

be placed where they would receive the necessary care. The maladjusted and emotionally unstable individual should be given better supervision and kept in contact with the clinic through the local worker. If more intensive treatment was needed arrangements were made to have the individual visit the clinic frequently.

Reports from the local superintendents of public welfare have been encouraging and they have been enthusiastic about the results obtained. They have acted upon the advice of the clinic and now have a better understanding of the individuals.

SUMMARY

An analysis is presented of 120 cases examined in thirteen counties of the State during the year 1936-37 by the State Mental Hygiene Clinic. This analysis illustrates the value of these clinics and that this is one of the constructive measures that should be used to prevent not only mental disorders but delinquency. This work was undertaken with the concept that the problems of children and adults should be treated as early as possible, rather than to ignore them until institutional care is necessary. The importance of heredity, environment and training in producing mental disorders is emphasized and that good results may be obtained by manipulation of these factors. No unusual methods were used in examining and treating these patients and they are representative of the rural population of this social strata.

Some years ago the State attempted such clinics but they were abandoned because of lack of funds. At this time there is a need for such clinics and the necessary funds should be appropriated. Educational programs in recent years have enlightened the public so that we can shift the scope of the work from the court to the community. The purpose of this analysis is to broaden the understanding and increase the cooperation of the physicians of the State in the program of the Mental Hygiene Clinic, for without this support little can be accomplished.

DISCUSSION

DR. D. C. WILSON, Charlottesville: The value of a traveling clinic depends more than anything else on what the local community can do after the clinical study has been made, for no matter how thorough their study may be and how correct their recommendations yet they have not really accomplished anything until these recommendations are carried out. I do not know what local arrangements Dr. Williams has but from our experiences in Charlottesville and in Danville we have found it very difficult to have recommendations carried out so efficiently that problems may be solved. You have noted in his paper that perhaps they have a great variety of different difficulties described, that is poor homes, upset families, need of boarding homes, need of vocational guidance. These difficulties are in practically every community but the needs are there also and unless the needs are met there are very few ways that the difficulties can be remedied. It is believed that criminal tendencies and mental diseases both psychoneurotic and psychotic all belong to one great group of behavior problems, that is one great class of disease of the personality; therefore, delinquency as well as mental disease and other behavior disorders all fall within the realm of the psychiatrist. Also it is believed that just as in heart disease a great many of these cases can be prevented if they can be recognized early and controlled. Therefore, such clinics as Dr. Williams has been carrying out are of great value in recognizing these disorders and adequate follow-up of the social worker is supplied, so that if his orders can be carried out, these studies will be of immense value. There is no one in the community who could do more than the physician; if the local physician is interested—the work will flourish. We have been conducting a clinic in Danville once every month for the last four years. There we are absolutely dependent upon the physicians of the town. Unless we have the cooperation of Dr. Garnett as well as the other physicians of Danville we could not get anywhere. From Dr. Williams' report it is probable that his studies will follow the same line that all other psychiatric clinics follow, that is, at first he will get the feebleminded and the borderline intelligence cases about which he can do very little. Indeed, there is nothing to do until the communities realize that they must have special classes in their schools, and the State realizes that we must have more than the Colony at Lynchburg to look after these individuals. At the present time all that is done is to send them to the penitentiary where they get instructed in crime. It is too late to wait until these children with borderline intelligence get into the adolescent stage. They should be recognized sooner and socialized in the school. It is for these people that we need a trade school. Indeed, the Medical Society of Virginia could do more for the problem of delinquency by recommending a trade school or that trade schools be established throughout the State than by any other way. I certainly enjoyed Dr. Williams' paper. I think it was a splendid piece of work that he illustrated and I certainly hope that he will get the cooperation of all the physicians in the neighborhood, for certainly without them he can do nothing.

DR. FRANK D. WILSON, Norfolk: Dr. Williams' paper served to emphasize the report of the Child Welfare Committee yesterday, in which that committee recommended that the Society take some action toward forwarding child welfare generally in the State. Dr. Williams has called your attention to the fact that the economic status of these children is of the lowest, or at least in the lower starta, and that the family difficulties probably come as the result of poverty and misunderstanding resulting from poverty.

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The fact that only fifty counties have been visited by the clinics emphasizes the need of additional appropriations for the purpose of carrying this work into all the counties of the State. So it is all along the line of child welfare. In almost every part of the work, with the exception possibly of the orthopedic, there are insufficient funds to carry on the work. It seems to me the Medical Society has the opportunity to be of great service to the children of the State in bringing to bear its support in this work. Dr. Hall, Superintendent of Public Instruction, has recently made a survey of the schools, making a study of high-grade mental defectives, morons, who are repeaters and costing the State a great deal of money; and he is asking the State for appropriations for special classes. If these clinics can be continued through all the one hundred counties, and if the Department of Education can get sufficient funds to set up the classes which Dr. Hall wishes to inaugurate, there is no reason why this situation should not be very greatly improved.

DR. WILLIAMS, closing the discussion: I want to thank Dr. Dave Wilson and Dr. Frank Wilson for their discussion of this paper, and to explain that what we are trying to do is to enlist the support of the local physicians, primarily, and also to use the local welfare worker in the County. That has been just a recent development in the Counties of the State. These workers frequently visit Richmond, perhaps once a week or twice a week; and when they visit Richmond we can talk with them about individuals whom we have examined. In that way we hope to keep contact with them through the social worker, and can have them brought to Richmond if necessary. Of course, we have not reached the western part of the State; it is only the eastern part of the State that we have been able to contact, because of the limited time.

JOHN PETER METTAUER'S NOTES ON CLINICAL LECTURES BY BENJAMIN RUSH.

W. HERMAN BELL, A.B., PH.D.,
Professor of French, Hampden-Sydney College,
Hampden-Sydney, Virginia.

Among the interesting manuscripts in the Hampden-Sydney college library there are some choice bits of Mettauerana.[1] The list includes letters, diplomas, certificates of membership in learned societies and account books kept by both John Peter Mettauer and his father, Francis Joseph Mettauer. There is also the birth certificate of Francis Joseph. The accounts cover the period from 1789 to 1850, although there are some gaps. They are well kept and very informative at times. They should be valuable to historians, for Francis Joseph treated such well-known people as Judith Randolph, Peter Francisco, Patrick Henry and John Randolph. Henry's record indicates that he suffered from frequent stomach disorders and, better than that, proves that he paid his doctor if not all his other creditors.

In addition to the above there is a small unbound booklet entitled "Notes from a Course of Lectures on the Institutes and Practice of Medicine Delivered in the University of Pennsylvania by Benjamin Rush, M.D., etc." The lectures are copied in longhand. Close comparison with several samples of Dr. Mettauer's hand convince me that the writing is his. The first four pages of the lecture reproduced below have been lost, which explains the beginning in the midst of a sentence.

"method of learning the cure of diseases. The description of diseases in Europe are by no means applicable to such as occur in the United States. Till within these few years the English and American poets imitated the writings of Virgil, and all our poems exhibited Roman manners and customs. The British and American painters imitated Raphael, and our pictures exhibited Italian landscapes.

Mr. West first attempted to deviate from this absurd custom. His paintings are very justly admired by amateurs. In the same manner till the time of the illustrious Sydenham and Morton, our books of medicine exhibited an account of Greek and Roman practice, and were in reality mere copies from the Greek and Roman authors. Within these 30 or 40 years physicians have laid aside their folios and attempted the true Hippocratic art of studying medicine. I do not mean by studying the works of this great man, but by observing carefully diseases as they occur and make observations for themselves.

1. These were deposited at Hampden-Sydney by Mrs. Genevieve Holladay whose husband, the late Dr. W. M. Holladay, bought them at the sale of Dr. John Peter Mettauer's property after his death. Mrs. Holladay still has a number of Dr. Mettauer's surgical instruments. Another friend presented the College with a metal, jug-like ball, which formerly adorned the cupola of the Randolph-Macon Medical School conducted by Dr. Mettauer. This cupola is now in Richmond.

Hence we explain the fact that within 30 or 40 years past more important improvements have been made than in the 100 years preceding.

Nature, I repeat it, must be our guide. Let her be observed with attention. This is the more necessary in North America, as accounts of our diseases (which differ very decidedly from those of the West Indies and Europe) are more useful as they are rare. An American physician will in vain attempt to cure diseases which occur only in our country by European practice or that of the West and East Indies. Many Americans have lost their lives under the care of the most eminent British physicians from the mild practice which they use being incapable of subduing a disease of such force as that they encountered. Again the diseases of our country afford us a strong argument in proof of this position. Our epidemics, for instance, when have we had 2 epidemics exactly alike in their symptoms? They never are alike in different seasons.

2ndly. By visiting the sick and observing nature a knowledge of the pulse only can be acquired. This knowledge, I repeat again, can only be had by frequenting the bedside of our patients. By visiting the sick you acquire a knowledge of the symptoms which cannot be described by books, as the minute variations of the pulse, changes in the countenance, voice and excretions of the urine, etc.

3rdly. By observing nature, the combination of diseases may be learned, and this is never learned from books. No books which I have ever read give an account of these combinations. Thus for instance, how frequently are hysteria and worms complicated together? And what authors will you find teaching the symptoms and cure of this complication? Diseases are described simply and their combinations remain unnoticed.[2]

4th. By observing nature in preference to books we avoid the acquisition of false theories, source of error in medicine. I think Dr. Cullen justifiable in asserting that you will find ten false facts, for one false theory in medicine.

5th. You will avoid deception, from the propensity of authors to relate miraculous symptoms, and facts of different kinds. Few authors describe a new appearance in a disease without some exaggeration.

6th. By early habits of visiting the sick, you will conquer the reluctance with which sick rooms inspire young practitioners, and subdue these feelings which often obtrude on the mind at a time when the exclusive consideration of the patient's care is necessary.

7th. The impressions which diseases make on our minds are more durable than the most accurate description either in a lecture or in a book. In a word I would as soon readily believe that a man could learn to swim without entering the water, as that he could learn to cure diseases without attending to the symptoms and various circumstances connected with them. To render my observation on visiting the sick as profitable as I can, I proceed next to make some remarks on the proper methods of conducting yourselves in your attendance on the sick.

1st. Visit your patients at least once a day in acute or dangerous cases. The neglect of this has sometimes made further visits of physicians useless, even where no immediate necessity appeared for doing this.

2nd. Visit them at the same hour every day. By doing this you never surprise them either on their close(t) stool chair or in any situation which would render your visits unpleasant. Again your coming will not surprise them, or disappoint them. You catch your patient, as it were at the moment of hope, and a few words of encouragement dropped from a Physician has often done more good than the most powerful cordials. Hope has a singular influence on sick people. I once knew a lady kept awake a whole night by her Physician's[3] having disappointed her by not coming at the appointed hour. Hope should be instilled into the minds of your patient. Believe me, gentlemen, it is of more consequence in some states of the system than all the cordials of the universe.

3rd. Have your medicines administered as soon as possible after (they) are prescribed, the interval is unpleasant to the patient.

4th. Have your medicines put up with care and taste and write your directions in a legible hand. All men cannot write an elegant hand, but there are few who cannot write a legible hand. Numerous and fatal are the consequences of neglecting this. I have known a Physician write a prescription, in which he intended a solution to be made in aqua Fontana and he wrote it aqua Font, but so badly as to be interpreted aqua Fortis. The apothecary used the Nitric Acid—the patient took it and died. Another wrote the words, Vinum Antimoniale, so badly

2. Does not this last paragraph appear a little opposed to Dr. Rush's unity of diseases? (Note of Dr. Mettauer).

3. The author's spelling has been maintained as far as possible in this copy.

as to be mistaken for Vitrum Antimalia. The consequence in this case was also fatal.

Under this head I may also caution you against seeing patients too early in the morning, or too late in the evening. The propriety of this caution must be evident to every delicate mind. Never intrude at meal times.

I hope my next observation may not be so applicable to any present so as to induce him to think it levell'd at him. I must reprove the contempt in which most young physicians hold the office of an apothecary. As well might a man expect to be a general without previously being a soldier, as to be a physician without having been previously an apothecary.

The names of Cullen, Fothergill, and Watson might be sufficient to reprove this foolish pride. All these gentlemen rose to eminence in their profession, and they were all apothecaries' boys and served their time out in apothecaries' shops. I shall date the decline of the utility of our science in this country from this proud and idle spirit. Besides, those patients who have most need of an apothecary are those from whom we derive most of our profits. Hence we find starving physicians in the neighborhood of rich apothecarys.

In chronic complaints a good nurse and a good apothecary are more liberally rewarded, and in fact more really useful than a physician. Permit, therefore, gentlemen, to recommend a strict observance to this caution to be your own apothecary.

5. Never neglect common complaints for uncommon ones. While the celebrated Dr. Hamilton was attending the practice of an hospital at Edinburgh, a patient was admitted that had two heads. The students in general were examining this monster. Hamilton alone was feeling the pulse of a patient with a common intermittent fever. Being asked why he neglected to examine so curious a deviation from nature, he replied he should probably never again meet with the like circumstances, but fevers he would see every day of his life perhaps, and they are consequently of more importance to him in practicing medicine than all the monsters in the universe. In like manner you had better be well instructed in the cure of fevers, than that of cancer or Aneurism or other rare diseases. It would be a matter of comparatively small consequence if all our patients with Cancer were to die, if we could succeed in curing all the fevers which daily present themselves to our notice. We meet with 10,000 fevers where we meet with one aneurism.

6. Sit up with your patients at night especially if they be critically situated. Many circumstances of their complaints can be observed by this method which we should otherwise remain ignorant of. The positions of the patient in bed—his heat or coldness (in the extremities)—his respiration and perspiration, nay, all the apparently trifling circumstances give useful hints respecting his disease. The late king of Prussia, we are told, had taken a young nobleman under his care to instruct him in the art of war. He caused him to sit up whole nights or frequently called him up in the course of the night, in order to inure him to hardship. If then so much care is taken to instruct a person in the art of taking away life, with how much greater care and diligence ought we to practice the like hardships in cases where we can restore and preserve life. By pursuing this line of conduct we are able to perform V. S. in critical cases as frequently and as sparingly or copiously as we please, or exhibit Bark Wine, etc., at the most proper times. I once knew a Physician get into handsome practice by curing a patient of an intermittent, sitting up with him at night. By doing this he was able during a remission of the fit to pour in the Bark plentifully and thereby cured him of his complaint.

7. Never cease visiting your patients until they are perfectly cured. Patients are too apt to think themselves well before they are really so. The advice of a physician is necessary to convalescents in several points. Diet, dress, exercise and several other circumstances apparently trifling should now be attended to. Relapses succeed fevers sufficiently often from these causes to warrant our making this remark. It is true that from causes which we cannot foresee or prevent such accidents do now and then result, but the neglect of physicians is too often the shamefull cause of them.

8. Let no avocations of business or pleasure prevent your attendance on patients. When a physician undertakes the care of a patient, he enters into a contract with that patient—the subject of this contract is the life of the patient. The physician's time is mortgaged to his patient and it is unjust for him to be deprived of it, at least his share.

9. In every part of your attendance on patients, endeavor to inspire them with hope and confidence in your prescriptions. The delusions of Mesmer

prove how much is owing to this passion (Hope). Mesmer's anecdote to his apothecary, "conceit can kill and conceit can cure".

10. I hope I need hardly mention the delicacy with which every practitioner should treat the complaints of females whatever may be their rank in life. I have never known a physician, particularly if young, prosper, who was neglectfull of the complaints of his female patients, or who treated the sex with any indelicacy. The above particulars are more especially necessary in persons of respectability and rank in life, but they should be observed in private practice. The forms in visiting hospital patients I shall illustrate during my attendance on the hospitals during the ensuing winter. Practicing in hospitals is attended with several conveniences and inconveniences. The conveniences of hospital practice are that medicines are administered with more accuracy than in private practice. The diet and exercise of the patients are regulated according to our wishes—and in general our government over our patients is more perfect than in private practice but these advantages do not compensate for the inconveniences attendant on hospital practice. These are: 1st. The patients are in general such as from their mode of life are much debilitated, and their constitutions much impaired by strong drink and other causes. 2ndly. Patients seldom apply for relief to hospitals except in cases where their cures have been unsuccessfully attempted. Lastly, the bad air-confinement to one room and not sufficient cleanliness constitute a permanent objection to hospital practice. Those who have an opportunity should attend both public and private practice. There again we see the utility of keeping our own medicines—our pupils could not else see our practice on patients. Clinical lectures are of great utility in studying medicine. They were first introduced by Dr. Rutherford into the University and hospitals of Edinburgh. The university owes much of its reputation to the establishment of clinical lectures. Drs. Hair, Stark, and Stahl assisted in promoting the study of medicine at Vienna in this way.

I shall make observations during the winter on such cases as occur in our hospital, either there or from this chair.

I next proceed, gentlemen, to notice the forms necessary to be observed in visiting our patients.

In the first place the utmost respect is to be manifested, and no concern of our own should, as I observed before, prevent our attendance on the sick. As soon as we enter a patient's house, if our religion does not prohibit it[4], we should take off our hats. The master of the house should be considered as present in every part of it. If his servant appears we are to recollect that he is the representative of his master and is to be treated with respect.

2ndly. If a lady conduct you upstairs recollect always to precede her. The reason for this must be obvious to every one of you. When you arrive at the top of the stairs let the lady precede you and shew you to the chamber of the patient. In coming down stairs walk behind her.

3rdly. When you approach the chamber of your patient, give notice of it by a Hem, cough or some other method. If you can conveniently send word of your arrival it is best to be done. Always knock at the chamber door. Here I must repeat the good effect of visiting your patient at a particular hour. You catch him, as it were, at the moment of hope and a disappointment is to him a serious misfortune.

4thly. In consultations the consulter should go first to his patient's room, even if he be the younger man. The consulted physician should never feel the pulse of the patient till the other has, in the presence of the patient, mentioned the remedies which have been used and a short account of the symptoms. Reason and justice concur in demanding this. If the first physician were to (enter) a minute or two before the consulted it would be better. The consulted physician should not even answer a question without asking the consulter—and the patient should hear the prescriptions.

5thly. Whenever you enter the chamber of your patient sit down in a chair, a trunk, or if there be none in the room, on the bedside of your patient. It shows recollection. Pull off your gloves; if winter your great coat must be laid aside, and if it be wet must not be (taken into) your patient's room. Never feel the pulse of your patient as soon as you enter his room. Dr. Fothergill relates an interesting instance of a physician being discarded for feeling the pulse of a patient with his glove on. Be careful to avoid entering into any conversation with your patient before you feel his pulse. Conversation has a great influence on the pulse. When you have done this the history of his case had better be ac-

4. Might there not be a possible connection here with Dr. Mettauer's extreme reluctance to remove his hat from his head, even on the way to his last earthly resting place? It is entirely possible that he had felt the effect of long contact with the Quakers.

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quired from the patient himself. He is certainly the best judge of his disease, though the worst of its cause. His friends must inform you of the last. The following are the questions necessary to be asked: 1st. How long have you been indisposed? 2nd. How, when and where were you first seized? What time of the day and what were you doing when taken? at home, or abroad? walking, sitting, etc.?

3rdly. Your next inquiry should be concerning the remote cause of the disease. Here, as I have just observed, the patient is seldom the proper person to interrogate. His friends, acquaintances, and in some instances, his enemies, should be asked. He will seldom confess that intemperance is the cause, if it even should be.

4thly. Your next questions may be more general, as of the diet, drink, exercise, cloathing of your patient—also his business, pleasures, whether he has been exposed to cold, and many other of the like enquiries, not only with respect to the day for which you are called but for several days previous to his disease. Heat and cold are very common causes of diseases. Sydenham observed this long ago and with great reason. Enquire whether your patient has ever been affected in like manner before. If not what diseases he has been subject to—also his mode of life for a long time before. The gout at 40 is often the consequence of intemperance at 20, or 30, and blindness at 50, of accidents at 30. I once knew a gentleman who was affected with seminal weakness in his old age which he confessed was brought on by the detestable vice of onanism, the practice of which he acquired while a boy at a boarding school. Instances have been known of diseases of the brain on many years after by strokes on the skull. A gentleman once had a violent pain over his right eye, brought on by his school master having lifted him up by his hair at school.

5thly. Had you ever the same disease before? If so, what was the cause and how were you cured? Where were you when sick? Did it alternate with any other disease? Consumption has been known to alternate with rhumatism. If your patient has been relieved of pthisis by rhumatism you had better excite the latter as it is a safer disease than pthisis. Had you ever a cutaneous disease, or issues? If so, did they suddenly disappear? This has frequently been a source of disease, which may be cured perhaps by exciting again the skin disease.

6thly. Never be deceived in the symptoms of diseases by the medicines which have been used. Had your patient a diarrhea? Ask him if he has used any medicines for the purpose of purging himself—salts, castor oil, etc., produce this effect. Black stools, a very alarming symptom of disease, are frequently produced by opium. Disury too has been the effect of this medicine.

7thly. The age of your patient must be known. Particular ages have their particular predispositions to diseases. More especially this must be sought after in females, the catamenia should never be lost sight of in female complaints. From 14 to 15 years of age is the time of their commencement; their continuance from 45 to 50. The peculiar predispositions of the natives of different countries are to be enquired after. Thus Dr. Hillary informs us that the intermittents of the Negroes in Barbados terminated in a swelled leg. A mulatto girl from that island whom I cured of that disease in this city had a swelled leg in consequence. Enquire also the diseases of the patient's ancestors. Many diseases are hereditary and such are more difficultly cured. The most common of these are mania, gout and consumption. The prognoses in these diseases you know is not flattering. Enquire if there are any particular family medicines which have been much used in the complaints of your patients. They are common and should be used before any others.

Enquire about the diet of your patient. Intemperance in this or in drink can only be learned by enquiring of the friends of the sick, or by eating with them occasionally. I once detached the cause of violent bowel complaint, in a lady, by dining with her. I observed that she eat an immense quantity of mustard and pepper, and that all her food was very high(ly) seasoned. The vinegar, which the ladies use when young (in pickles) to keep them from growing too corpulent, has been known to produce very unpleasant consequences in their advanced years.

The king of Prussia, perhaps the greatest glutton that ever existed, who eat almost without cessation, used to say he scarce eat enough to keep soul and body together.

But, gentlemen, I must again repeat the necessity there is in all female complaints of attending to the uterus. And in infants you should never lose sight of teething and worms. So in gluttons and people in high life, I would never lose sight of the gout and in ladies I would never lose sight of the uterus.

These I consider as preliminary observations. Clinical cases in our hospital will afford me an opportunity of illustrating my ideas of predispositions.

I next proceed to treat of the questions to be asked concerning the actual diseases—but this must be the subject of our next lecture."

The booklet contains twelve lectures. Whereas, he states at the beginning of lecture number two, other men rely upon the color of the skin or other sign of their choice for diagnosis of a patient's disease, he prefers to be guided in this matter by the condition of the pulse in the main. He then proceeds to discuss his science under the four headings of Physiology, Pathology, Therapeutics and the Practice of Medicine. But from his subsequent remarks on theology and philosophy one infers that he was almost as much interested in these subjects as in the practice of medicine.

Dr. Rush directs his students on occasion to consult his books, various topics being more fully discussed there. I am informed by the Librarian of the University of Pennsylvania that none of Dr. Rush's lectures has ever been published, to the knowledge of any of the University authorities.

CASE OF PNEUMOCOCCIC MENINGITIS WITH RECOVERY.*

ELAM C. TOONE, JR., M.D.,
Medical Resident,
Richmond, Virginia
and
UPSHUR HIGGINBOTHAM, M. D.,
Roanoke Rapids, North Carolina

Recovery from pneumococcic meningitis is so rarely encountered that a recent case observed on the ward of St. Philip Hospital stimulated our interest in the disease. The literature has been reviewed and two interesting facts are noted. First, a considerably larger number of cases with recovery were reported than we had anticipated. Between the years 1926 and 1936 thirty-five[1–35] cases appear in the literature, and H. S. Goldstein and H. Z. Goldstein[37] in a comprehensive review list 150 such cases reported before 1926. The second point of interest was noted in the wide variety of therapeutic agents used (Table).

In the case reported here no treatment was used other than repeated lumbar and cisternal punctures with drainage of the subarachnoid space. Antimeningococcic serum in the amount of ninety cc. was given when the case was first studied; however, when the true identity of the organism was established this was at once discontinued.

In noting the treatment used in thirty-one of the recorded thirty-five cases with recovery, no evidence is offered to establish any one form of treatment as being of significant value. Numerically the use of antipneumococcic serum is the most popular, but it cannot be shown that its use is more efficacious than repeated and thorough drainage of the subarachoid space. Kolmer[38–40], who has done extensive experimental work on pneumococcic meningitis in dogs, reports the most satisfactory results from the use of antipneumococcic serum and ethylhydrocupreine injected into the carotid arteries and the cisterna magna. His experimental work, however, has not been given adequate trial in human subjects.

*Hospital Division, Medical College of Virginia, Richmond, Virginia, Department of Medicine.

CASE REPORTS

O. C., a colored male, age twenty-four years, was admitted to St. Philip Hospital at 9:30 A.M., September 26, 1936, about an hour after having been rendered unconscious by a blow on the left forehead with a piece of lead pipe. His history otherwise was irrelevant.

On examination he was found to have a laceration three inches in length over the left forehead which exposed the skull, revealing a linear fracture. Both lids of the left eye were swollen and discolored. In addition, there was a slight epistaxis. The remainder of the physical and neurological examination was negative.

The wound was debrided and sutured; the patient was given 1500 units of anti-tetanic serum and admitted to the ward for observation.

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TABLE

CASE	AUTHOR	SERUM	LUMBAR DRAINAGE	CISTERNAL DRAINAGE	ETHYLHYDRO-CUPREINE (OPTOCHIN)	SPINAL LAVAGE	MISCELLANEOUS
1.	Meyer	antimeningococcic 15 cc.	x	x			
2.	Smith	antipneumococcic (Felton)	x (1)				
3.	Weinberg		x (1) diagnostic				Potassium permanganate enemas
4.	Raveno, McLaughlin	antipneumococcic (Felton)	x	x			
5.	Lynch	antipneumococcic (Felton)					
6.	McAuley, Hilliard	antipneumococcic (Felton)					
7.	Eichelbaum	antipneumococcic (Felton)	x			x	
8.	Mella				x	x	
9.	Roussel		x				Methenamine
10.	Rohrback	antipneumococcic (Felton)					
11.	Shuller						Pneumococcic antibody
12.	Harkavy	antipneumococcic (Felton)					
13.	Globus, Kasanin		x	x			
14.	Amesse		x				
15.	Bedell		x	x		x	Rubber tissue drain in cistern.
16.	Baron		x (1)				No other treatment
17.	Harris, Yenikomshian	antipneumococcic antimeningococcic	x	x			20 cc. 1% mercurochrome i. v.
18.	Weil	antipneumococcic	x	x			.5% acriflavine hydrochloride, i. v.
19.	Santa Maria, Solis				x		
20.	Meieo	antipneumococcic					
21.	Apfel	antimeningococcic antipneumococcic	x				Pregl's Sol. (iodine)
22.	Goldberg (1)	antipneumococcic (Felton)					Intraventricular irrigation
	Goldberg (2)				x		
23.	Carbonell, Cook				x		Huntoon's antibody sol.
24.	Simpson	antimeningococcic antipneumococcic					
25.	Segers, Schere	antipneumococcic					
26.	Norburg		x (1)				
27.	Bennett, Meier		x				
28.	Stoessiger		x				.5% mercurochrome, intravenously and intraspinally
29.	Uhr		x (2)				
30.	Clark, J. G.		x				
31.	Croft	antipneumococcic intramuscularly	x (1)				

X-ray examination of the skull showed only the linear fracture without evidence of depression of either the outer or inner tables. Laboratory studies were negative except for a leucocytosis of 23,100 cells.

The patient remained in the hospital for twelve days during which time he complained of moderate headache during the first week and had a recurrence of the epistaxis on October 1, 1936. Otherwise, his hospital stay was uneventful and he was discharged

in good condition, the wound having healed by primary intention.

On October 27, 1936, he was re-admitted to the hospital in a semi-conscious and irrational condition. The following history was obtained from his relatives: After leaving the hospital the patient had been in good health and normal in every respect except for a constant drainage of clear fluid from his nose. Three days before re-admission he developed a sore throat and head cold. On October 26, 1937, the drainage from his nose suddenly stopped and he began to complain of headache, nausea and stiffness of the neck. Within two hours after this onset he was semi-conscious and irrational, remaining in this condition until admission to the hospital.

Physical examination revealed a well-developed and well-nourished individual who was irrational, restless and completely uncooperative. The head was negative except for the healed scar over the left eye. There was no evidence of ocular palsy, pupillary irregularity or pathological changes in the fundus. The neck was rigid and any attempt at flexion caused excruciating pain. The throat was mildly injected and the mucous membrane was dry. There was no evidence of cardiac hypertrophy, the rate was ninty-six per minute, the rhythm regular, and there were no murmurs. The blood pressure was 110/70. Examination of the lungs was unsatisfactory because of lack of cooperation on the part of the patient, but no pathological changes were noted. The tendon reflexes were normal or slightly hypoactive and there was no evidence of pyramidal tract involvement. Kernig's sign was positive.

A spinal puncture was performed and cloudy fluid under increased tension was obtained. A cell count showed 2,275 white blood cells per cm., 91 per cent of which were polymorphonuclear cells. The identification of the causative organism was not made by the interne who examined the fluid and it was thought wise to treat the patient as a case of meningococcic meningitis. During the next twenty-four hours he received 30 cc. of antimeningococcic serum intraspinally and 60 cc. intramuscularly. By this time culture of the fluid showed the organism to be a pneumococcus but attempts made to classify it as Type I, II, III, IV, XII or XIV were not successful. No other typing sera were available. Administration of the antimeningococcic serum was discontinued.

Following this accumulation of data, subsequent treatment consisted of spinal drainage at twelve-hour intervals and general supportive measures. Pneumococci were cultured daily from this fluid. Although no signs or symptoms appeared to implicate the sinuses, an X-ray examination on November 27, 1936, showed clouding of the cells of the left frontal sinus. The possibility of this location as the focus of the infection was considered and, after careful deliberation, this sinus was explored. No pus was encountered but a small depressed fracture was found and a fragment of bone removed. The underlying dura was described as being hyperemic but not distended.

His course following this procedure was quite stormy and he continued to have a temperature elevation varying between 98 degress F. and 104 degrees F. As a rule when his temperature reached a level of 103 or above he would be irrational and apparently in a critical condition. A spinal or cisternal puncture would be performed with drainage of from 15-100 cc. of cloudy fluid and within twelve hours the patient would be rational, cheerful and enjoying a general diet or a cigar of which he was particularly fond. By this time any systematic scheme of spinal drainage was discarded and lumbar or cisternal punctures were done only as a change in the patient's condition indicated. Each specimen of spinal fluid was cultured and each continued to show the presence of pneumococci. The cell count remained high, varying between 200 and 3000 cells with a polymorphonuclear count always above 75 per cent. The last spinal puncture, done on February 2, 1937, was still positive for pneumococci. On February 5, 1937, his temperature dropped suddenly from 104 degrees F. to 96 degrees F. and thereafter never exceeded 100 degrees F. until discharge from the hospital March 3, 1937, being normal or subnormal for seven days prior to this date. The patient was hospitalized for 129 days and during this period received eighty-two spinal and ten cisternal punctures. On February 2, 1937, the last lumbar puncture was done and, although it was still positive for pneumococci, the dramatic change in the patient's condition occurred three days later and it was thought inadvisable to molest the subarachnoid space again. Following discharge from the hospital, the patient was seen at intervals of two to three weeks in the out-patient department where complete physical ex-

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amination failed to reveal any residual effects of the disease. After this he fell from view, but he was contacted in November, 1937, by the Social Service Department and was found to have returned to work and to be in normal health.

CONCLUSIONS

1. A case of pneumococcic meningitis secondary to fracture of the skull and cribriform plate with recovery is reported.

2. The literature between 1926 and 1936 has been reviewed and thirty-five reported cases of pneumococcic meningitis with recovery found.

3. The treatment used in thirty-one of these cases has been tabulated.

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Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia.

The report of the State Health Department's bureau of communicable diseases, as compiled for the month of April, shows the following cases compared with the same month in 1937.

	1938	*1937*
Typhoid and Paratyphoid	15	20
Diphtheria	46	42
Scarlet Fever	146	60
Measles	2,462	1,882
Meningitis	9	44
Poliomyelitis	2	3
Rocky Mountain Spotted Fever	0	0
Typhus Fever	0	0
Undulant Fever	5	5
Tularemia	0	1
Smallpox	0	2

TUBERCULOSIS STUDY OF SCHOOL CHILDREN IN NORTHUMBERLAND COUNTY

The State Department of Health recently instituted a tuberculosis study among the Northumberland County school children. This work has been undertaken to obtain, if possible, definite information on the value of the Vollmer-Patch tuberculin test as compared to the intradermal method.

Fourteen hundred children were given the test simultaneously. Approximately nine hundred reacted positively and were X-rayed with the rapid method using paper films.

The Department expects to obtain information on this study which can be applied in other counties among children of school age. Final results as yet have not been tabulated. Figures will be published at a later date.

TYPHOID FEVER

As is well known, the typhoid fever incidence invariably increases in the summer season, cases usually reaching their maximum in July, August and September.

In July, 1936, fifty-nine cases were reported and for the similar month in 1937, one hundred and forty-two. August, 1936, showed a total of 106, while August, 1937, had an aggregate of 116. There were ninty-nine cases in September, 1936, and seventy-three in 1937 for the same period.

Too much emphasis cannot be placed upon the necessity of travelers and excursionists generally using precaution against contracting typhoid. While the medical profession appreciates the value of antityphoid vaccine for those who travel in foreign countries or in remote localities of the United States, it is difficult to convert the public to this type of prophylaxis. Education appears to be much needed.

Moreover, the public should be urged to be circumspect when on shorter journeys and camping tours. Lacking approved water supplies all drinking water should be boiled for at least twenty-minutes or in lieu thereof a drop of iodine added to every quart of water intended for drinking purposes.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. JAMES B. STONE, 15 Maxwell Road, Richmond.

President-Elect—MRS. HAWES CAMPBELL, Venter.

Corresponding Secretary—MRS. LAWRENCE O. SNEAD, 5307 New Kent Road, Richmond.

Recording Secretary—MRS. JAMES K. HALL, 3011 Seminary Avenue, Richmond.

Treasurer—MRS. REUBEN F. SIMMS, 2502 Hawthorne Avenue, Richmond.

Chairman of Publicity—MRS. FRED J. WAMPLER, 4103 Forest Hill Avenue, Richmond.

Dr. Wright, Sr.—An Appreciation.

With saddened hearts and stunned minds the members of the Auxiliary to the Medical Society of Virginia learned of the death on May 8 of Dr. Fletcher J. Wright, Sr., of Petersburg. Dr. Wright, who at the time of his death was chairman of the Auxiliary Advisory Council, had long been a friend of our organization. He was never too busy to lend

a sympathetic and understanding ear to our troubles and was ever ready to give us the benefit of his wise counsel. His helpful kindness will be sadly missed by those who had the privilege of working with him and our entire organization suffers a great loss at his passing. We take comfort in the knowledge that he has gone on to a higher service. To his widow, our former state president and a faithful worker for the cause for which we stand, and to his family the Auxiliary to the Medical Society of Virginia extends its deepest sympathy.

J. W. S.

RESOLUTIONS ON DEATH OF DR. WRIGHT

At a special meeting of the Petersburg Unit of the Woman's Auxiliary of the Fourth District Medical Society, the following resolutions were unanimously adopted:

WHEREAS, by divine will, Dr. Fletcher J. Wright, Sr., husband of the president of this auxiliary, departed this life on May 8, 1938, and

WHEREAS, he was a generous, accomplished, and diligent physician, and

WHEREAS, he was our friend, and the Chairman of the Advisory Council of our State Auxiliary, NOW THEREFORE BE IT RESOLVED

1. That we express our profound sorrow at his passing, and our sympathy to his family.
2. That an additional ten dollars be contributed to the support of the tuberculosis bed for physicians at Blue Ridge Sanatorium this year in honor of the memory of Dr. Wright.
3. That these resolutions be recorded in our minutes.
4. That these resolutions be published in the VIRGINIA MEDICAL MONTHLY, and in the local newspapers.
5. That a copy of these resolutions be sent to his family.

Committee:

DOROTHY JACOBSON, *Chairman*
MARION EDMUNDS
CATHERINE JONES
CAROLINE CLARKSON

News from Auxiliaries.

MID-TIDEWATER

The April meeting of the Woman's Auxiliary to the Mid-Tidewater Medical Society met at the home of Dr. and Mrs. H. F. Hoskins, Saluda, on April 26, with Mrs. Hawes Campbell presiding. After a short business session, the following program and doctors' memorial service was given:

A DOCTOR'S PRAYER	Mrs. Hawes Campbell
A POEM, THE DOCTOR	Mrs. Horace Hoskins
THE COUNTRY DOCTOR	Mrs. Horace Hoskins
LIVES OF LOUIS PASTEUR AND MADAME CURIE,	Mrs. Paul Pearson
MILE STONES IN MEDICINE	Mrs. J. W. Smith
STATE MEDICINE Affirmative	Mrs. M. H. Harris
STATE MEDICINE Negative	Mrs. W. S. Cox

The Auxiliary was most fortunate and happy to have as a guest of honor our state president, Mrs. J. B. Stone, of Richmond, who gave a talk on "The Workings of an Auxiliary", which was very interesting and inspiring. We learned much of what our sister auxiliaries are doing.

After a delicious luncheon at Mrs. Blakey's, the meeting adjourned to meet again in July at Gloucester.

(MRS. PAUL) VIRGINIA MCG. PEARSON,
Corresponding Secretary.

NORTHAMPTON-ACCOMAC

The last regular meeting of the Auxiliary to the Northampton-Accomac Medical Societies was held at the home of Mrs. J. L. Decormis, in Accomac, with fifteen members present.

The following interesting talks were given:

HEALTH EDUCATION	Mrs. R. J. White
HYGEIA MAGAZINE	Mrs. W. J. Sturgis
THE TUBERCULAR BED	Mrs. O. R. Fletcher

We made a contribution of twenty dollars for the tubercular bed.

Our hospital being our chief objective, we were very glad to have a splendid report from its superintendent, Miss Evelyn Heath.

One new member was taken in, making a total of five for the year.

We extend our congratulations to one of our members, Mrs. W. B. Trower, upon the birth of a daughter.

Our June meeting will be a picnic to which the doctors of the two societies will be invited.

(MRS. J. MORTIMER) SUSIE N. LYNCH,
Corresponding Secretary.

PETERSBURG

The Petersburg Medical Auxiliary held its monthly meeting April 26 at the Nurse's Home, when "Doctor's Day" was observed, as requested by the American Medical Auxiliary for auxiliaries all over America. This was observed by the local physicians' wives in the form of a memorial service to two well-known doctors who rendered great service to Petersburg fifty years ago, Dr. Robert D. McIlwaine and Dr. Herbert Claiborne, both of whom died in 1905, and to four physicians who have died in Petersburg during the last year, Drs. Hargrave, Perkins, Reese and Hoy.

A sketch of Dr. McIlwaine's life and many trib-

utes of loving appreciation were read by Mrs. Meade Edmunds, and Mrs. Herbert Claiborne Jones, whose husband is a namesake, read a sketch of the life and work of Dr. Claiborne. Mrs. Jones also read excerpts from a book written by this much loved and honored physician, which was published before his death, and a most interesting article, "The Obligations of a Doctor's Wife", taken from another of Dr. Claiborne's writings, "The Old Virginia Doctor".

Miss Charlotte Snead gave the following appropriate readings, "Eulogy of the Doctor" by Robert Louis Stevenson, "My Doctor" by Daisy Gilbert, and a lovely poem, "Pastor and Doctor".

Miss Mary Plummer McIlwaine, daughter of one of the doctors eulogized, was a guest of the Auxiliary for this meeting. The fact that wives, sisters and daughters are eligible for membership to any Medical Auxiliary, makes Miss McIlwaine doubly eligible, to become a member, and so she was not only invited to become a member, but was requested to act as historian for the local Auxiliary and to compile a brief history of the lives and works of the outstanding physicians who have died in their medical ministry to Petersburg.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Cheplin Biological Laboratories

Cheplin's Epinephrine Hydrochloride Solution, 1:1000, 10 cc.

Cheplin's Epinephrine Hydrochloride Solution, 1:1000, 30 cc.

Lederle Laboratories

Viosterol (A. R. P. I. Process) in Oil.

Eli Lilly & Co.

Ampoules Metycaine 10 per cent for Spinal Anesthesia.

Ampoules Metycaine 20 per cent for Infiltration and Regional Anesthesia.

Parke, Davis & Co.

Cevitamic Acid—P. D. & Co.

Tablets Cevitamic Acid—P. D. & Co., 25 mg.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Sulfanilamide Tablets, 7½ grains.—Each tablet contains sulfanilamide—Lilly (New and Nonofficial Remedies, 1938, p. 453), 7½ grains. Eli Lilly & Co., Indianapolis, Ind.

Solution of Adrenalin Chloride 1:100, 5 cc. vials.—A solution containing one part adrenalin (as adrenalin chloride) (New and Nonofficial Remedies, 1938, p. 231) in eleven parts of physiological solution of sodium chloride preserved by the addition of 0.5 per cent of chloretone and not more than 0.1 per cent of sodium bisulfite. Recent evidence indicates that the oral inhalation of a solution of epinephrine ten times stronger than those used by hypodermic injection gives relief in acute attacks of bronchial asthma when other measures fail. Every precaution must be taken to avoid confusion between this solution (1:100) and the official 1:1,000 solution of epinephrine hydrochloride, since the 1:100 solution is not suitable for hypodermic use and should never be employed in that manner. Parke, Davis & Co., Detroit, Mich.

Sulfanilamide Tablets, 7½ grains.—Each tablet contains sulfanilamide—P. D. & Co. (New and Nonofficial Remedies, 1938, p. 231) 7½ grains. Parke, Davis & Co., Detroit, Mich. (*J. A. M. A.*, April 9, 1938, p. 1193.)

Staphylococcus Toxoid—P. D. & Co.—A detoxified staphylococcus toxin (New and Nonofficial Remedies, 1938, p. 422) prepared by treatment of the toxin with a 0.3 per cent formaldehyde solution at 37 C. The material is preserved with 0.01 per cent merthiolate (sodium ethyl-mercuri thiosalicylate) and the usual sterility tests required by the National Institute of Health are made. Staphylococcus toxoid is tested for dermo-necrotic and lethal innocuity according to methods outlined by the National Institute of Health. Each of the two strengths is marketed in 5 cc. rubber diaphragm stoppered bottles. Parke, Davis & Co., Detroit, Mich.

Hypodermic Tablets Dilaudid Hydrochloride, 1 mg. (1/64 grain).—Each tablet contains dilaudid hydrochoride (New and Nonofficial Remedies, 1938, p. 317) 1 mg. (1/64 grain). Bilhuber-Knoll Corporation, Jersey City, N. J.

Hypodermic Tablets Dilaudid Hydrochloride, 1.25 mg. (1/48 grain).—Each tablet contains dilaudid hydrochloride (New and Nonofficial Remedies, 1938, p. 317) 1.25 mg. (1/48 grain). Bilhuber-Knoll Corporation, Jersey City, N. J.

Propaganda for Reform

Pellagra and Nicotinic Acid.—After the discovery of the effectiveness of nicotinic acid and its amide in the treatment of blacktongue in dogs had been described, it was prophesied that the usefulness of these compounds in the treatment of pellagra soon would be investigated. Although the publication of Elvehjem and his collaborators occurred in September, a time of the year when the incidence of pellagra is on the wane, commercial nicotinic acid has been tested already on a number of pellagrins in at least three widely separate localities. There now have appeared reports from Durham, N. C., Cincinnati and Indianapolis. These reports agree in ascribing a prompt curative effect to nicotinic acid. It should be emphasized that all three groups of workers have reported undesirable reactions from taking nicotinic acid. The India-

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napolis investigators stated that following the oral administration of nicotinic acid, in the dosages used by them, the patients noted sensations of heat and tingling of the skin. There was a distinct dilatation of peripheral blood vessels during this time, but the fall in blood pressure was only slight and temporary. The Durham investigators found that in doses of 60 mg. there was no reaction following oral administration of the drug. After intramuscular or intravenous injection, however, a marked flushing of the skin was observed. Spies and his collaborators likewise observed flushing, itching and tingling of the face, trunk and extremities following the oral administration of therapeutic doses of nicotinic acid. It is evident that more information is necessary before the usefulness of nicotinic acid in the treatment of pellagra can be evaluated. The evidence so far seems promising. (*J. A. M. A.*, January 22, 1938, p. 289.)

Book Announcements

New Books.

Recent acquisitions in the Library of the Medical College of Virginia, available to our readers are:

Assoc. for Res. in Nervous and Mental Disease—Tumors of the Nervous System.
Bauer & Hull—Health Education of the Public.
Bigger, J. W.—Handbook of Hygiene.
Blatz *et al*—Collected Studies on the Dionne Quintuplets.
Browning, E.—Toxicity of Industrial Organic Solvents.
Cannon, W. B.—Wound Shock and Hemorrhage.
Chambers, J. S.—The Conquest of Cholera.
Coignard, J.—The Spectacle of a Man.
Crothers, B.—A Pediatrician in Search of Mental Hygiene.
Donaldson, S. W.—The Roentgenologist in Court.
Ellis, H.—Sex in Relation to Society.
Fisher, C. *et al*—Diabetes Insipidus and the Neuro-Hormonal Control of Water Balance.
The Fumigation of Ships With Hydrogen Cyanide.
Gray, G. W.—The Advancing Front of Science.
Haldane, J. B. S.—Heredity and Politics.
Holck, H. G. O.—Diet and Efficiency.
Holmes, E.—The Metabolism of Living Tissues.
Hooton, E. A.—Apes, Men and Morons.
Horsburgh & Heath—Atlas of Cat Anatomy.
Huntington, E.—Season of Birth.
Hurd-Mead, K. C.—A History of Women in Medicine.
Hyde, R.—Laboratory Outline in Filterable Viruses.
Imperatori & Burman—Diseases of the Nose and Throat.
Jacobson, E.—You Must Relax.
Jones, C. M.—Digestive Tract Pain.
Levene & Bass—Nucleic Acids.
Mainland, W. F.—German for Students of Medicine and Science.
Mayer, A.—La Vie.
The Medical Uses of Radium. Med. Res. Council Spec. Rep. No. 226.
Morley, J.—Abdominal Pain.
Neymann, C. A.—Artificial Fever.
Ridgway, J. L.—Scientific Illustration.
Roberts, L. J.—Nutrition Work With Children.
Rogers, L.—The Truth About Vivisection.
Sayles, M. B.—Substitute Parents.
Schindler, R.—Gastroscopy.
Simon, C. M.—The Share-Cropper.
Simons, E. J.—Primary Carcinoma of the Lung.
Stimson, P. M.—Common Contagious Diseases.
Strecker & Chambers—Alcohol; One Man's Meat.
White, B.—The Biology of Pneumococcus.
Young, H.—Genital Abnormalities, Hermaphroditism and Related Adrenal Diseases.

The Compleat Pediatrician. Practical, Diagnostic, Therapeutic and Preventive Pediatrics. Second, completely rewritten edition. For the Use of Medical Students, Internes, General Practitioners, and Pediatricians. WILBURT C. DAVISON, M. A., D. Sc., M. D., Professor of Pediatrics, Duke University School of Medicine, and Pediatrician, Duke Hospital; Formerly Acting Head of Department of Pediatrics, Johns Hopkins University School of Medicine; Fellow of American Academy of Pediatrics; etc. Durham, N. C. Printed by Seeman Printery for Duke University Press. 1938. Octavo of vi-250 pages. Cloth. Price, $3.75.

The second edition of the "Compleat Pediatrician" has been published and, upon reading through its pages, it will be noticed that there is some change in the arrangement of the subject matter which makes the book more readable.

The diseases described, instead of being listed alphabetically, are classified into groups, such as those relating to the respiratory tract, gastro-intestinal tract, etc., rendering information more accessible. In the chapters dealing with the group diseases, there is presented a list of symptoms followed by a short description of the diseases related to this group. Each disease description is followed by information about laboratory procedures, differential diagnosis, treatment and prevention pertaining to this disease or condition. Cross indexing is carried out as in the first edition. The following chapters are assigned to laboratory and other procedures, nutritional requirements, feeding and diets, general treatment and nursing, growth development and care of the child, history taking and physical examinations, and drugs and prescriptions. A bibliography is inserted at the back of the book.

This edition is revised to contain the recent knowledge of pediatrics, along with the above changes. It can be said that the author has again presented a good text which should be of immense value to the general practitioner as well as pediatrists for ready reference. L. E. S.

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Editorial

The Control of Syphilis Gets Under Way.

Syphilis is one of the great American diseases. One out of every ten of us contracts it. It is estimated that there are ten million American syphilitics. Syphilis need not affect so many of us. We know its cause and we know how to cure it. The Scandinavian countries utilizing the same knowledge that we possess have within recent years reduced the incidence of this disease among their peoples to 10 per cent of its former proportions.

When Dr. Thomas Parran assumed office as Surgeon General of the United States Public Health Service, he made a nation wide fight against syphilis a major part of his program. The four objectives of his control program have been briefly summarized as follows:

1. Provision of adequate diagnostic and treatment facilities.
2. Improvement in case reporting and the supervision of cases.
3. Intensive and complete investigation of cases and contacts.
4. Professional and public education in matters pertaining to social hygiene.

The fight against syphilis goes on. Everywhere there is a war of words against it, in books and in the public press. In Chicago mass interest crystallized not long ago in an antisyphilis street parade joined in by people of a great variety of ages and colors, and by both sexes. About the same time a referendum was conducted by the United States Public Health Service, the Chicago Board of Health and other agencies, to determine whether the citizens would like to be given without expense by their own physicians a blood test for syphilis. Of course there is danger of such intensive propaganda over-shooting the mark and getting ahead of the facilities for service, not to speak of the risk of rendering the public less receptive through an overdose of being told what to do, but it is certainly an improvement over the old attitude of shamed silence.

The repercussions of this national antisyphilis fight have of course been felt in Virginia, although we have had less fanfare and no bargain Wassermann days. In 1936 the Medical Society of Virginia, through its president, promptly acceded to Dr. Parran's wishes to set up a committee to review the question of syphilis control and authorized it to report at a later meeting. The excellent summary of the findings and recommendations of this committee were subsequently approved by the Society and in printed form they may be found in the April 1937 issue of the VIRGINIA MEDICAL MONTHLY.

But the activity of the MEDICAL SOCIETY OF VIRGINIA has apparently been little felt in the state at large or by the Legislature, a body which has seemed singularly free from concern over the whole venereal disease question in Virginia, and which has shown little disposition to vote funds to insure the control of the disease within our borders. It would seem

that not yet have our Society's committees perfected the techniques necessary to translate their decisions into an irresistible leadership of public opinion.

In the State Board of Health, however, there has been evidence of considerable interest and activity. The recent decision to furnish all physicians in the state with equipment for mailing material for dark field examination was a timely one. From what source the interest in syphilis in the Virginia press arises, or who is responsible for the interest in the subject on the part of many civic organizations in Virginia, we do not know.

In the spring of 1937 an important survey of the venereal disease situation in Richmond was undertaken by the United States Public Health Service in response to requests from the Richmond Academy of Medicine and other Richmond agencies. The results of that investigation also were published in the VIRGINIA MEDICAL MONTHLY. It was shown that there was no department for venereal control in the set-up of the city Department of Health; that only $4,750 was spent annually in venereal control; that in spite of a state law requiring it, neither the physicians nor the hospitals of the city were reporting cases of venereal disease; and that in the public clinics, whereas many individual treatments were given for venereal disease, personnel was insufficient, records were meagre, laboratory diagnosis was not cross checked, and the follow-up system was utterly inadequate. This indictment could probably have been made of many other cities in Virginia. In fact an official high in the Public Health Service, speaking before the Medical Society of Virginia about a year ago, described the syphilis clinic in one of them as "an arsphenamin filling station."

About a year after the Richmond survey, physicians of the city received franked report cards and instructions on how to advise the Department of Health concerning venereal disease in their practice. Recently another encouraging move has been made. The office of Venereal Disease Control has been created in Richmond and Dr. Francis Upshur has been placed in charge. The creation of this office is probably the most important single step that has ever been taken in this state in the control of venereal disease. It is devoutly to be hoped that it may be a permanent office.

Several years ago in one of our Southern states a representative sampling of 500 negroes who had syphilis was taken. Only 14 per cent had received any treatment and in less than 3 per cent was treatment at all adequate. The survey in Richmond showed that whereas 26,218 injections of arsphenamin were given in the Out Patient Department of the Medical College of Virginia in 1935 in only 17 per cent of the cases were the treatments completed. The lapsed cases and the undiscovered contacts represent the real problem of venereal control.

It is expected that so far as Richmond is concerned Dr. Upshur and his assistants will see that most cases carry through their treatment to a cure and that exposed persons are brought under control by force if necessary. This will materially reduce the venereal population of Richmond which has been estimated to be as high as 25,000.

City and county medical societies throughout the state could find no better way to achieve their deserved leadership in medical affairs for the good of all concerned than by taking immediate steps in their own locale to have created similar offices of venereal disease control.

Group Hospital Insurance on the Increase.

When Group Hospital Insurance was begun in Virginia three years ago there were some who doubted the soundness of the principles involved and many who feared that the venture would fail. Today there is every reason to believe that group hospital insurance from a financial point of view is a success in Virginia. In the state today there are 40,000 persons who are participating in this plan. In Richmond there are 18,000, and 100 hospitals beds are kept occupied every day by the recipients of the benefits of the plan. New members are being added in Richmond alone at the rate of more than 1,000 a month.

The success of hospital insurance has permitted an annual broadening of the contract so that now under it one may obtain emergency treatment in any hospital in the world; members of the insured's family may be included in the plan at reduced rates; and the number of days of hospital care has been increased by adding extra days for each year a contract has been in force continuously. A person who was entitled to twenty-one days hospitalization in the first year now may receive as much as thirty-five days hospitalization in the fifth year if his contract remains continuously in force.

The plan has been adopted in other cities than Richmond. In Norfolk, Roanoke, Lynchburg, and

Winchester it is on a firm foundation. It is being tried in Alexandria and in Danville and in the hospitals of Southwestern and Eastern Virginia.

Three years of course is too short a time to estimate to what extent this movement will grow but it seems likely that in the near future a very large proportion of all hospitalized patients who formerly paid for their hospitalization out of their own pockets will be taken care of under this popular and economical plan, a plan which now costs a minimum of eighty-five cents a month for an individual and a maximum of $2.00 a month for a family and its dependent minors.

Hospital insurance is not to be confused with health insurance. The former is a non-profit community service, managed largely by physicians, which does not interfere with the free choice of doctor by patient, and which is entirely devoid of political manipulation or Federal control. The latter has dangers too well recognized to deserve serious discussion any longer in a medical journal. It should give the medical profession of Virginia satisfaction that hospital insurance in this State originated in their midst. It is a good witness to the seriousness of their intention to face in forthright fashion one of the complex socio-economic problems of their time and to their ability to manage their own medical affairs.

Department of Clinical and Medical Education of the Medical Society of Virginia

Medical School Clinics.

At both the Medical College of Virginia and the University of Virginia postgraduate clinics were held in April. Both were well attended as is shown by the reports which follow.

The clinics at the University were in the form of a symposium on the endocrine glands, with the following lecturers: Dr. Alfred Chanutin, Dr. J. M. Meredith, Dr. Edward Corey, Dr. H. B. Mulholland and Dr. E. P. Lehman, of the University of Virginia, and Dr. Emil Novak, Associate in Clinical Gynecology at Johns Hopkins Hospital.

Visitors in attendance at the University clinics were:

Dr. J. F. Repass, Wytheville
Dr. J. E. Gardner, Roanoke
Dr. A. M. Groseclose, Roanoke
Dr. C. D. Bennett, Chatham
Dr. J. G. Brown, Woodville
Dr. A. A. Sizer, Schuyler
Dr. N. B. Jeter, Covington
Dr. C. H. Iden, Berryville
Dr. Homer E. Clarke, Massie's Mills
Dr. W. F. Hartman, Swoope
Dr. O. H. McClung, Lexington
Dr. Francis Lee Thurman, Buena Vista
Dr. J. E. Cox, Waynesboro
Dr. R. N. Caldwell, Galax
Dr. Douglas Boyce, Rural Retreat
Dr. P. G. Hundley, Lynchburg
Dr. W. R. White, Culpeper
Dr. Mary Harley, Sweetbriar
Dr. Carol Rice, Sweetbriar
Dr. Powell G. Dillard, Lynchburg
Dr. W. S. Ferguson, Lynchburg
Dr. C. B. Ransone, Roanoke
Dr. J. W. Preston, Roanoke
Dr. Albert Stone, Roanoke
Dr. E. F. Flora, Roanoke
Dr. F. O. Plunkett, Lynchburg
Dr. E. G. Scott, Lynchburg
Dr. J. J. Neal, Danville
Mrs. C. B. Ransone, Roanoke
Dr. B. F. Randolph, Arrington
Dr. R. W. Garnett, Danville
Dr. Rachel Weems, Harrisonburg
Dr. S. Newman, Danville
Dr. R. D. Glasser, Norfolk
Dr. Joseph Bear, Richmond
Dr. J. J. Waff, Shenandoah
Dr. R. E. Booker, Lottsburg
Dr. C. L. Booker, Lottsburg
Dr. Rex Blankenship, Richmond
Dr. O. B. Darden, Richmond
Dr. Lewis Kolipinski, Petersburg
Dr. H. T. Chelf, Culpeper.
Dr. R. C. Allison, Petersburg
Dr. R. W. Vaughan, Richmond
Dr. M. L. Boyle, Richmond
Dr. S. M. Cottrell, Richmond
Dr. R. A. Nichols, Jr., Richmond
Dr. L. L. Shamburger, Richmond
Dr. John E. Cole, Fredericksburg
Dr. L. F. Lee, Fredericksburg
Dr. Anita Lotti, Charlottesville
Dr. M. M. Pinckney, Richmond
Dr. Frank Stafford, Blue Ridge Sanatorium
Dr. W. E. Brown, Blue Ridge Sanatorium
Dr. W. A. Brumfield, Farmville
Dr. M. P. Cocke, Charlottesville
Dr. Frank Daniel, Charlottesville
Dr. H. L. Baptist, Ivy
Dr. Glenn C. Campbell, Staunton
Dr. B. H. Payne, Staunton
Dr. H. P. Brown, Lynchburg
Dr. F. R. Hodges, Lynchburg
Dr. F. R. Hodges, Jr., Lynchburg
Dr. L. G. Roberts, Moorman's River
Dr. E. B. Robertson, Danville
Dr. M. G. Karrel, Montreal, Canada
Dr. D. E. Watkins, Waynesboro
Dr. W. E. Jennings, Danville
Dr. D. R. Lyman, Wallingford, Conn.
Dr. J. E. Wine, Harrisonburg

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Dr. Lewis Holladay, Orange
Dr. E. D. Davis, Crozet
Dr. O. N. Shelton, Orange
Dr. I. H. Hurt, Roanoke
Dr. F. A. Farmer, Roanoke
Dr. Percy Harris, Scottsville
Dr. W. H. Paine, Charlottesville
Dr. H. I. Slate, Farmville
Dr. F. R. Crawford, Farmville
Dr. W. A. Murphy, Staunton
Dr. Alex Robertson, Staunton

The symposium of the Centennial year of the Medical College of Virginia was held in conjunction with the Stuart McGuire Lectures on April 28, 29, and 30. Dr. George R. Minot, Professor of Medicine, Harvard Medical School and Director of Thorndike Memorial Laboratory delivered the Stuart McGuire Lectures. The following addressed the Friday and Saturday sessions: Dr. H. E. Jordan, University of Virginia; Dr. O. H. Perry Pepper, Philadelphia; Dr. Nathan Rosenthal, New York; Dr. Alexis F. Hartmann, St. Louis; Dr. Harvey B. Stone, Baltimore; Dr. Edward D. Churchill, Boston; and Dr. Walter Bauer, Boston.

Those who registered at these sessions were:

Dr. E. L. Alexander, Newport News
Dr. S. A. Anderson, Richmond
Dr. T. A. Anderson, Richmond
Dr. Frank L. Apperly, Richmond
Dr. L. H. Apperson, Richmond
Dr. C. C. Bailey, Charlottesville
Dr. Harvie S. Baker, Norfolk
Dr. James P. Baker, Richmond
Dr. Allen Barker, Petersburg
Dr. Walter Bauer, Boston, Mass.
Dr. Mary Baughman, Richmond
Dr. Thomas Beath, Richmond
Dr. William Bickers, Richmond
Dr. I. A. Bigger, Richmond
Dr. Karl S. Blackwell, Richmond
Dr. Charles A. Blanton, Richmond
Dr. H. Wallace Blanton, Richmond
Dr. Nathan Bloom, Richmond
Dr. D. Coleman Booker, Richmond
Dr. W. E. Bray, Charlottesville
Dr. A. G. Brown, III, Richmond
Dr. H. C. Brownley, Lynchburg
Dr. E. W. Buckingham, Newport News
Dr. R. D. Butterworth, Richmond
Dr. Ernest P. Buxton, Richmond
Dr. C. Howard Cain, Petersburg
Dr. H. Cantor, Petersburg
Dr. C. M. Caravati, Richmond
Dr. B. L. Carleton, Newport News
Dr. W. E. Chapin, Richmond
Dr. C. C. Chewning, Jr., Bowling Green
Dr. E. D. Churchill, Boston, Mass.
Dr. B. S. Clements, Matoaka, W. Va.
Dr. C. C. Coleman, Richmond
Dr. J. E. Collier, Richmond
Dr. J. B. Dalton, Richmond
Dr. Don S. Daniel, Richmond
Dr. H. S. Daniel, Louisa
Dr. T. Dewey Davis, Richmond
Dr. R. M. DeHart, Christiansburg
Dr. E. A. Delarue, Richmond
Dr. A. I. Dodson, Richmond
Dr. J. N. Dudley, Eastville
Dr. M. C. Edmunds, Petersburg
Dr. Everett Evans, Philadelphia, Pa.
Dr. W. F. Evans, Charlottesville
Dr. W. H. Evans, Richmond
Dr. Charles A. Faber, Ft. Monroe
Dr. D. M. Faulkner, Richmond
Dr. Ernest Fischer, Richmond
Dr. M. S. Fitchett, Norfolk
Dr. E. Latane Flanagan, Richmond
Dr. Fred P. Fletcher, Richmond
Dr. J. C. Forbes, Richmond
Dr. K. S. Freeman, Kenbridge
Dr. G. S. Fultz, Butterworth
Dr. Louise Galvin, Richmond
Dr. Emily Gardner, Richmond
Dr. H. T. Garriss, Richmond
Dr. Thomas F. Gill, Richmond
Dr. W. Wallace Gill, Richmond
Dr. James H. Gordon, Covington
Dr. E. G. Grantham, Richmond
Dr. B. H. Gray, Richmond
Dr. David B. Gregg, Richmond
Dr. Ruth Mason Grigg, Petersburg
Dr. St. George Grinnan, Richmond
Dr. M. Grove-Hagen, Richmond
Dr. H. B. Haag, Richmond
Dr. J. M. Habel, Jetersville
Dr. J. M. Habel, Jr., Richmond
Dr. E. C. Harper, Richmond
Dr. C. L. Harrell, Norfolk
Dr. Percy Harris, Scottsville
Dr. Alexis F. Hartmann, St. Louis, Mo.
Dr. H. T. Hawkins, Waynesboro
Dr. J. E. Haynesworth, Buckingham
Dr. W. H. Higgins, Richmond
Dr. Randolph Hoge, Richmond
Dr. Guy W. Horsley, Richmond
Dr. J. Shelton Horsley, Richmond
Dr. Frank L. Hughes, Ashland
Dr. John Hundley, Jr., Lynchburg
Dr. J. Morrison Hutcheson, Richmond
Dr. E. H. Ingersoll, Richmond
Dr. E. C. Jamison, Rocky Mount
Dr. A. M. Jenkins, Richmond
Dr. F. S. Johns, Richmond
Dr. Mary E. Johnston, Tazewell
Dr. Basil Jones, Richmond
Dr. J. Bolling Jones, Petersburg
Dr. C. T. Jones, Petersburg
Dr. T. D. Jones, Richmond
Dr. H. E. Jordan, University
Dr. Wm. R. Jordon, Richmond
Dr. E. C. Joyner, Suffolk
Dr. L. Karp, Richmond
Dr. Charles Kendrick, Richmond
Dr. J. D. Kernodle, Richmond
Dr. Paul Kimmelstiel, Richmond
Dr. D. M. Kipps, Front Royal
Dr. Fred G. Kroncke, Richmond
Dr. Edward J. Lefeber, Richmond
Dr. A. S. Lilly, Richmond
Dr. P. D. Lipscomb, Richmond
Dr. Louis Lovenstein, Richmond
Dr. John P. Lynch, Richmond
Dr. R. G. McAllister, Richmond
Dr. J. A. McCullough, Richmond
Dr. E. P. McGavock, Richmond
Dr. W. Ambrose McGee, Richmond
Dr. Hunter McGuire, Richmond
Dr. R. J. Main, Richmond
Dr. F. B. Mandeville, Richmond
Dr. D. Meade Mann, Richmond
Dr. E. R. Martin, Newport News.
Dr. H. Page Mauck, Richmond
Dr. T. Stanley Meade, Richmond
Dr. W. A. Murphy, Staunton
Dr. Sidney Negus, Richmond
Dr. Charles Nelson, Richmond
Dr. Kinloch Nelson, Richmond
Dr. R. A. Nichols, Jr., Richmond
Dr. Margaret Nolting, Richmond
Dr. Charles L. Outland, Richmond
Dr. Wm. H. Parker, Richmond
Dr. Marshall J. Payne, Staunton
Dr. W. R. Payne, Newport News
Dr. O. H. Perry Pepper, Philadelphia, Pa.
Dr. Harrison Picot, Richmond
Dr. C. I. Pirkle, Petersburg
Dr. Cullen Pitt, Richmond
Dr. E. E. Pittman, Oak City, N. C.
Dr. Wm. B. Porter, Richmond
Dr. R. S. Preston, Richmond
Dr. Wm. R. Pretlow, Warrenton

Dr. C. W. Pritchett, Danville
Dr. C. W. Putney, Staunton
Dr. M. B. Raiford, Franklin
Dr. O. L. Ramsey, Gretna
Dr. E. A. Ratcliffe, Richmond
Dr. B. W. Rawles, Sr., Richmond
Dr. B. W. Rawles, Jr., Richmond
Dr. J. G. Rennie, Richmond
Dr. A. F. Robertson, Staunton
Dr. W. M. Robinson, Richmond
Dr. R. O. Rogers, Bluefield, W. Va.
Dr. S. C. Rogers, Milwaukee, Wis.
Dr. Mason Romaine, Petersburg
Dr. Nathan Rosenthal, New York, N.Y.
Dr. D. M. Royal, Salemburg, N. C.
Dr. M. P. Rucker, Richmond
Dr. H. B. Sanford, Richmond
Dr. J. W. Sayre, Newport News
Dr. J. H. Scherer, Richmond
Dr. C. I. Sease, Richmond
Dr. J. A. Shield, Richmond
Dr. H. B. Showalter, Kenbridge
Dr. R. F. Simms, Richmond
Dr. James H. Smith, Richmond
Dr. H. M. Snead, Petersburg
Dr. W. P. Starling, Roseboro, N. C.
Dr. H. U. Stephenson, Richmond
Dr. Henry S. Stern, Richmond
Dr. M. S. Stinnett, Buchanan
Dr. Harvey B. Stone, Baltimore, Md.
Dr. L. T. Stoneburner, Richmond
Dr. A. R. Stork, Richmond
Dr. Arnold Strauss, Norfolk
Dr. Lee E. Sutton, Richmond
Dr. R. V. Terrell, Richmond
Dr. J. W. Thomas, Richmond
Dr. G. V. Thompson, Chatham
Dr. P. L. Thompson, Grand Rapids, Mich.
Dr. W. D. Tillson, Richmond
Dr. J. M. Tompkins, Richmond
Dr. Elam C. Toone, Richmond
Dr. C. C. Trice, Richmond
Dr. G. Van Huysen, Richmond
Dr. Harry Walker, Richmond
Dr. Fred J. Wampler, Richmond
Dr. H. H. Ware, Richmond
Dr. Samuel Warshuer, Richmond
Dr. T. M. Watson, Greenville, N. C.
Dr. J. H. Weatherby, Richmond
Dr. John G. Welch, Richmond
Dr. H. F. White, Fishersville
Dr. L. J. Whitehead, Richmond
Dr. Claiborne Willcox, Norfolk
Dr. J. W. Wilkins, Mt. Olive, N. C.
Dr. J. N. Williams, Richmond
Dr. Carrington Williams, Richmond
Dr. E. S. Williams, Richmond
Dr. F. D. Wilson, Norfolk
Dr. N. G. Wilson, Norfolk
Dr. F. J. Wright, Petersburg
Dr. Robert H. Wright, Phoebus
Dr. M. R. Yates, Petersburg

Obstetrics and Gynecology.

During April Dr. L. L. Shamburger conducted a postgraduate course in Obstetrics and Gynecology in Orange, Albemarle, and Augusta counties, holding classes at Orange, Charlottesville and Waynesboro.

On May 16, a course was begun in additional counties in the Valley of Virgina. Meetings are scheduled at Staunton, Harrisonburg, Luray, Woodstock, and Front Royal.

Pediatrics.

Dr. Robert B. Hightower completed a postgraduate course in Pediatrics in the Mid-Tidewater section on April 23. Meetings were held at Bowling Green, Tappahannock, Gloucester, and West Point. Since that time Dr. Hightower has been engaged on a circuit on the Peninsula of Virginia, holding meetings at Williamsburg, Hampton, Newport News, and for the colored doctors at Norfolk.

Internal Medicine.

The first short course in internal medicine was held by the Department of Clinical and Medical Education on the Eastern Shore of Virginia on May 10-11 and 19-20. Meetings were held at Nassawadox and Accomac Court House. Dr. T. Neill Barnett and Dr. William B. Porter of the Medical College of Virginia were the instructors. The following topics were discussed at the request of the Eastern Shore Societies.

1. Etiology and Treatment of Peptic Ulcer----Dr. Barnett
2. Remarks on Diseases of the Colon--------Dr. Barnett
3. Hyperinsulinism ----------Dr. Barnett

1. The Classification of Heart Disease with Special Reference to "Focal Infection"----------Dr. Porter
2. The Pathogenesis of Renal Insufficiency----Dr. Porter

During the month of July a similar course is planned for the Southwestern Virginia doctors. Members of the University of Virginia Medical School faculty will act as instructors. A more detailed report of these courses will be made at a later date. In the meantime, local societies wishing to have a similar course offered should communicate with the Executive Secretary, Box 1487, University Station, Charlottesville, Virginia.

GEORGE B. ZEHMER,
Executive Secretary.

Proceedings of Societies

Alleghany-Bath Medical Society.

This Society held its annual meeting at Hot Springs on April 28th, at which time the following officers were elected for the ensuing year: President, Dr. Robert A. Warren of Hot Springs; vice-president, Dr. Louis A. Houff of Clifton Forge; and

the secretary-treasurer, Dr. Robert P. Hawkins of Clifton Forge was re-elected.

The Amelia County Medical Society,

A unit of the Fourth District Medical Society, held a regular meeting at Amelia C. H., on May 4, and elected new officers and also delegate and alternate for the State meeting in Danville. The new officers are: President, Dr. H. Cowles Rucker, Mattoax; vice-president, Dr. J. M. Habel, Jetersville; and secretary-treasurer, Dr. J. L. Hamner (re-elected), Mannboro.

Arlington County Receives Award.

In the Fourth Annual Rural Health Conservation Contest, conducted by the American Public Health Association, Arlington County, Virginia, was among those granted an award of merit for the Eastern Division.

The Augusta County Medical Association

Held its regular quarterly meeting in Staunton, on May 4. Papers were presented by Dr. George B. Lawson, Roanoke, on "Sulfanilamide in the Treatment of Pneumonia" and Dr. Charles W. Putney, Staunton, on "Sirenonelian Monster".

In response to a request for the endorsement of a movement to make birth control a part of the State's public health program, Drs. Alexander F. Robertson, Staunton, and J. F. Hubbard, Waynesboro, were appointed a committee to investigate the request and make recommendations at a future meeting.

Dr. William A. Murphy and Dr. L. S. Booker, both of Staunton, are president and secretary, respectively, of this Association.

The next session will be held in Waynesboro, August 3.

The Clinch Valley Medical Society

Held its regular meeting in Norton, on April 30, with the president, Dr. R. L. Phipps, presiding. There was a very large attendance, and the following program was presented: "Immunizations in Children" by Dr. Robert B. Hightower of the Department of Clinical and Medical Education; "Various Types of Heart Disease: Their Management in Regard to Industry and Compensation" by Dr. Paul D. Camp, Richmond; and "The Laborer with Diabetes" by Dr. William R. Jordan, Richmond.

Lynchburg Academy of Medicine.

The regular meeting of the Academy was held in the Elk's Club, May 2, with Dr. Clyde Adkerson presiding. At this time, a native son of Lynchburg, Dr. C. P. M. Sheffey, a medical missionary in the Belgian Congo, gave a very interesting talk on "Practice of Medicine in Africa," stressing especially the tropical diseases.

C. E. KEEFER,
Secretary.

The Mid-Tidewater Medical Society

Met at Saluda on April 26, with Dr. Clarence Campbell of Sparta, president, presiding, and Dr. M. H. Harris secretary. At the morning session routine business was attended to and Dr. N. G. Nelms of Mathews was accepted as a member. The Society heard case reports from Dr. John R. Parker of Providence Forge on "Five Cases of Anthrax", and from Dr. Hawes Campbell of Enfield on "Hypotension". The members and guest were then entertained at lunch at Bristow Hotel by the local doctors.

At the afternoon session, papers were presented by the following guest speakers from Richmond: Dr. P. D. Camp on "Heart Irregularities", discussed by Dr. J. M. Hutcheson; Dr. D. G. Chapman on "Hypertension"; Dr. F. S. Johns on "Cancer of the Body of the Uterus"; and Dr. Chas. R. Robins, Sr., who spoke on a "New Operation for Inguinal Hernia" which was discussed by Dr. Guy Horsley.

In addition, the following members and guest were in attendance: Drs. R. D. Bates, Sr., R. D. Bates, Jr., Hawes Campbell, Jr., W. S. Cox, M. H. Harris, H. A. Tabb, Jas. W. Smith, W. P. Jones, V. R. Steiff, W. W. Rixey, S. E. Berger, O. T. Amory, W. O. Poindexter, and H. F. Hoskins.

Richmond Academy of Medicine.

Dr. J. C. Pennington, urologist of Nashville, Tenn., was the guest speaker at the meeting of the Academy on May 10, his subject being "The Management of Stones in the Upper Urinary Tract".

The only local speaker was Dr. J. Morrison Hutcheson who read a paper on "The Cardiac Complications of Funnel Breast".

The last meeting of the Academy until the Fall was held on May 24, at which time Dr. Karl S. Blackwell presented a paper on "Headache—Common Causes and Practical Applications", and Dr. J. H. Scherer read a paper entitled "The Blood Smear in Differential Diagnosis". Mr. Andrew D. Christion, local attorney, gave a talk on "The Doctor and the Law". The usual buffet suppers followed both meetings.

Roanoke Academy of Medicine.

The May meeting of the Academy was held on the 2nd at the Veterans Facility, Roanoke, at which time delegates and alternates for the Danville meeting of the State Society were elected, and the following were elected as officers for the year beginning October: President, Dr. L. G. Richards; vice-president, Dr. Charles A. Young; and secretary-treasurer, Dr. A. C. Davis. All are of Roanoke. The scientific program following the business session was presented by Drs. Paul Weitz, P. M. Jerrell, J. T. McKinney, F. C. Robbins, and W. J. Heffner, members of the Veterans Facility.

The Southwestern Virginia Medical Society

Held its annual spring meeting in Abingdon, April 14, under the presidency of Dr. P. S. Smith, Abingdon. The scientific session was attended by sixty-five members, and the following papers were presented: Diverticulitis of the Cecum by Dr. J. Stuart Staley, Marion; The Prevention of Deafness in the School Child by Dr. Harry B. Stone, Jr., Roanoke; Hysteria by Dr. Thomas N. Spessard, Roanoke; The Management of Trichomonas Infection in the Female by Dr. R. H. Grubbs, Christiansburg; Important Points to be Remembered about Crossed Eyes by Dr. John A. Pilcher, Jr., Roanoke; Psychiatric Aspects of Physical Disease by Dr. Joseph R. Blalock, Marion; and Hemiplegia Complicating Labor by Dr. Mike Hines, Abingdon.

The evening session was opened by a banquet with seventy-five members present, Guest speakers were Drs. Henry B. Mulholland and Robert V. Funsten, of the University of Virginia, whose subjects were "Newer Therapeutic Agents: Sulfanilamide, Protamine Insulin and Pneumococci Serum" and "Fractures", respectively.

Twelve new members were elected as follows: Drs. G. R. Carpenter, Bristol; C. W. Hickam, Pulaski; T. L. Gemmill, Radford; A. L. Jones, Chilhowie; V. J. Cox, Galax; Joseph R. Blalock, Marion; K. J. Moore, Bastian; H. L. Dean, Radford; Geo. W. McCall, Bristol; S. W. Huddle, Rural Retreat; R. O. Smith, Pulaski; and H. B. Stone, Jr., Roanoke. Dr. I. E. Huff, Roanoke, was elected to honorary membership.

The next meeting of the Society is scheduled for September.

Dr. James P. King, Radford, is secretary-treasurer.

South Piedmont Medical Society.

At the semi-annual meeting of this Society, held in Danville, in April, Dr. Coleman D. Bennett, of Chatham, was elected president. He succeeds Dr. A. P. Bohannon, of Virgilina.

News Notes

Danville Meeting of State Society.

The Program Committee of the State Society, in making plans for our sixty-ninth annual session in Danville, October 4-6, decided to continue the Round Table discussions this year in place of the symposia, as they proved so popular at our last meeting. The subjects were selected with a view to being of special interest to the general practitioner, but the various special societies were invited to arrange for Round Table discussions and several have already signified their intention of doing this.

Dr. G. F. Simpson, President, has announced that Dr. Frederick A. Willius, Rochester, Minn., and Dr. William J. Mallory, Washington, D. C., will be his special guests for this meeting.

Early in May, cards were sent all members, requesting that those who wish to present papers at the Danville meeting send titles with abstracts to the Society's office, 1200 East Clay Street, Richmond. Please bear in mind that *July 1 is the dead line* for receiving these titles.

Again, we advise that hotel reservations should be made promptly, especially by members who wish to be at headquarters hotel.

American Medical Association.

The annual meeting of the Association in San Francisco is very near at hand, June 13 to 17 inclusive, and elaborate preparations have been made for this occasion. Several special trips have been arranged for the comfort and pleasure of those who can attend, one of especial interest being that under the auspices of the American Express Travel Service, with district office for Virginia being in the Willard Hotel Building at 1414 F Street, Northwest, Wash-

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ington, D. C. A number of doctors from this section are planning to attend, including the three delegates from the Medical Society of Virginia, Dr. Wright Clarkson, Dr. Walter B. Martin, and Dr. J. C. Flippin. In addition to the splendid scientific programs always arranged for these meetings, this is a wonderful opportunity for fellows of the A. M. A. to see this lovely city and other places on the Pacific coast at their best.

Golf Tournament.

The twenty-fourth tournament of the American Medical Golfing Association will be played at the San Francisco Golf and Country Club, on June 13. Active fellows of the AMGA may compete for fifty beautiful trophies and prizes—for experts, dubs, beginners—in nine events, both gross and net. The cost of $7.00 includes greens fee, tournament fee, refreshments, exceptional entertainment, prizes, and the annual banquet—with "positively no speeches". New fellows pay an additional enrollment fee of $3.00. Bring your official handicap certified by your home club secretary. Any other information may be obtained from Bill Burns, Executive Secretary, Lansing, Michigan.

New Hospital in Southwestern Virginia.

Dr. George W. Botts has opened a new Eye, Ear, Nose and Throat Hospital at Norton—the only hospital of its kind in the extreme southwestern section of Virginia or eastern Kentucky. It has thirty-six rooms with twenty-one beds and is strictly modern in every respect. In addition to private rooms, there are three wards and also a suite for the treatment of colored patients.

The Virginia Pediatric Society

Held its annual clinical meeting on May 12, at Chamberlin Hotel, Old Point Comfort, with Dr. W. A. McGee of Richmond, president, presiding. Dr. J. M. Bishop of Roanoke is secretary. There were twenty-five members and ten guests present, in addition to a delegation of nurses from Norfolk. Several interesting papers were read and discussed at the morning session, which was followed by a luncheon. Golf and fishing engaged the attention of the doctors in the afternoon and, at this time, Dr. Basil Jones of Richmond proved to be the "real fisherman" of the seven indulging in this sport.

The next meeting of this Society will be a luncheon and business session in Danville at the time of the State Society meeting, in October.

State Board of Medical Examiners Appointed.

In accordance with nominations made by the Medical Society of Virginia, Governor Price has just re-appointed the following as members of the Medical Examining Board of Virginia for a term of four years: Dr. R. D. Bates, Newtown; Dr. P. St L. Moncure, Norfolk; Dr. H. U. Stephenson, Toano and Richmond; Dr. I. C. Harrison, Danville; Dr. J. W. Preston, Roanoke; Dr. P. W. Boyd, Winchester; Dr. Lewis Holladay, Orange; and Dr. F. H. Smith, Abingdon. The Fourth District member, to fill the vacancy caused by the death of Dr. F. J. Wright, will be appointed later.

Dr. E. H. Shackelford, Richmond, was appointed the osteopathic member of the Board and Dr. G. W. Johnson, Danville, the homeopathic.

The Mental Hygiene Society of Virginia

Held its annual meeting in Richmond, May 10, under the presidency of Dr. Beverley R. Tucker. Dr. Winfred Overholser, superintendent of St. Elizabeth's Hospital, Washington, D. C., was the guest speaker.

Dr. Howard Masters, Richmond, was elected president, and the following doctors were elected to three year terms as directors: Dr. J. Morrison Hutcheson, Dr. Austin I. Dodson, Dr. Basil B. Jones, Dr. Manfred Call, III, all of Richmond, Dr. James King, Radford, and Dr. T. N. Spessard, Roanoke.

Dr. White Ninety Years Young.

Dr. Joseph A. White of Richmond in April was receiving congratulations of friends on the celebration of his ninetieth birthday. Though he retired from practice a couple of years ago, Dr. White is still alert and keenly interested in medical affairs. He is the oldest living member of the Medical Society of Virginia in point of continuous membership, having joined in 1880, and has been the recipient of many honors from this and other organizations.

Medical College of Virginia Organizes New Alumni Chapters.

During the Centennial Year of the College, it is planned to organize as many new alumni chapters as possible. The following have been started recently:

The Petersburg Alumni, with Dr. Meade Edmunds as president;

The Lynchburg Alumni, with Dr. James R. Gorman as president; and

The Roanoke Alumni, with Dr. John O. Boyd president.

Other active chapters of the alumni are in Norfolk, the Peninsula Chapter in Newport News and vicinity, New York City and West Virginia.

Centennial Exhibit at Medical College of Virginia.

The final showing of the Medical College of Virginia Centennial Exhibit will be open to the public from June 1 to 10 inclusive. For the benefit of those who find it impossible to visit the exhibit during the day, it will also be open from 7:00 to 9:00 P.M. on June 6 to 10 inclusive. Several new exhibits will be on display.

Dr. and Mrs. Charles P. M. Sheffey

And two children who have spent the past year in the United States expect to sail on June 25, on the *S. S. Pennland* from New York to Antwerp. Their final destination is the Belgian Congo where Dr. Sheffey has been engaged for several years in mission work at Lusambo.

Dr. Thomas Wheeldon,

Richmond, recently delivered the orthopaedic lecture to the National Convention of the American Association of Health and Physical Education in Atlanta, his subject being The Relationship of Physiotherapy to Physical Education.

Medical Society of the State of North Carolina.

One of the best meetings in the history of this Society was held early in May under the presidency of Dr. Wingate Johnson of Winston-Salem. At this time Dr. James Sidbury of Wilmington succeeded to the presidency and Dr. William Allan of Charlotte was named president-elect. Dr. Thomas M. W. Long of Roanoke Rapids was re-elected secretary.

Dr. and Mrs. Wm. Lett Harris,

Of Norfolk, will spend the months of July and August at Courtney Terrace, Virginia Beach.

Dr. R. S. Griffith,

Waynesboro, was the recipient of congratulations, the middle of April, upon the celebration of another birthday. He did not give out his exact age but it is known that he has been a practicing physician continuously for fifty-four years, forty-seven of which have been spent in Basic City, later incorporated with Waynesboro. Dr. Griffith has held many positions of honor in his city and has for a number of years been a physician for the Norfolk and Western and Chesapeake and Ohio Railways. He is also a high ranking Mason.

Dr. C. E. Holderby,

For several years on the staff of the Eastern State Hospital, located in Williamsburg on May 15, where he is engaged in private practice.

News From Local Health Districts.

Dr. R. G. Beachley, formerly Deputy Director of Rural Health in the Southwest Health District, has assumed his duties as Health Officer in Arlington County. He succeeded Dr. Earle G. Brown, who resigned to accept a position in New York State.

Announcement has been made that the Board of Supervisors of Buchanan County recently voted the establishment of a full-time health department. Since April 1, 1936, Buchanan County's health activities were conducted as part of a district composed of Tazewell, Russell and Buchanan Counties. County health headquarters will be established in Grundy. The new health department will begin operating July 1, 1938.

News Notes from Medical College of Virginia.

The Centennial Session of the Medical College of Virginia will close June 4.

On Monday, June 5, the Commencement Sermon will be given by the Right Reverend Beverley D. Tucker at Saint Paul's Church at 8:00 P. M. Alumni Day will be observed on Monday, June 6. On Tuesday, June 7, at 10:30 A. M. the Centennial Program will be held at Saint Paul's Church. Dr. Harvey A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard Medical School, will be the chief speaker. Delegates are expected from many colleges and universities throughout the country. Greetings will be extended by Governor Price, Mayor Bright, Dr. Forest R. Moulton of the American Association for the Advancement of Science, and many others. Many alumni are expected for the Centennial celebration.

On Tuesday, June 7, at 8:00 P. M. at the Mosque the Commencement exercises will be held. Diplomas will be awarded to seventy-six graduates in medicine, sixteen graduates in dentistry, twenty-one bachelor's of science in pharmacy, and twenty-seven graduates in nursing, a total of 140 graduates. Twenty-one graduates in medicine will receive commissions as first lieutenants in the Reserve Corps,

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Medical, of the United States Army, and nine graduates in dentistry will receive commissions as first lieutenants in the Reserve Corps, Dental Unit. The Commencement address will be given by President J. Rion McKissick of the University of South Carolina.

The American Association of Bacteriologists and Pathologists has accepted the invitation of the College to hold its annual meeting in Richmond next year. This will probably be held April 6 and 7, 1939.

The new $313,000.00 dormitory is expected to be ready for occupancy July 1. The new building will house the residents, internes, et cetera, of the hospital division and the senior medical class. The building is designed to house 147 occupants, with cafeteria, auditorium, reading room, and other ultra-modern facilities for their comfort and convenience.

Miss Frances Helen Zeigler, professor of nursing, and Miss Lulu K. Wolf, associate professor of nursing, recently attended the annual meeting of the American Nurses' Association in Kansas City, Missouri.

News from University of Virginia.

On April 19 a portrait of Dean James Carroll Flippin was presented to the Medical School. Brief exercises were held in the auditorium of Madison Hall. The portrait was formally presented by Mr. James B. Black, President of the Senior Medical Class, unveiled by Dr. Flippin's grand-daughter, Miss Carroll Norrall of New York City, and accepted by the President of the University, Dr. John Lloyd Newcomb. It is the gift of the medical alumni since Dr. Flippin became Dean in 1924 and the graduating class for 1938. The portrait was done by Mr. Alpheus P. Cole of New York City.

On April 22 Dr. E. P. Lehman spoke before the Rockingham County Medical Society in Harrisonburg on the subject of Surgical Shock, and Dr. J. Edwin Wood spoke on the subject of The Effect of Tobacco on the Cardio-Vascular System.

On May 2 Dr. E. P. Lehman presented a paper before the American Surgical Association during the meeting of the Congress of Physicians and Surgeons in Atlantic City on The Treatment of Intraperitoneal Abscess form Appendicitis. The same paper was presented at the Twenty-Fifth Anniversary Celebration of Peter Bent Brigham Hospital in Boston on May 5.

The Twenty-First Postgraduate Clinic was held at the University of Virginia Medical School on April 29. Dr. Emil Novak, of the Johns Hopkins Hospital, spoke on Gynecological Endocrinology and Organo-therapy. The program included, in addition, the following papers by members of the University Faculty: The Thyroid by Dr. E. P. Lehman; The Pancreas by Dr. H. B. Mulholland; Chemical Advances in Endocrinology by Dr. Alfred Chanutin; The Adrenals by Dr. Edward Corey, and The Pituitary by Dr. J. M. Meredith. Eighty physicians were registered for this Clinic.

On April 29 Dr. H. E. Jordan took part in the symposium of the Centennial year of the Medical College of Virginia. He spoke on the subject of Blood Formation in Birds, With Special Reference to the Evidence for a Genetic Relation Between Lymphocytes and Erythrocytes.

Dr. C. H. Lenhart, Professor of Surgery at Western Reserve University, visited the Medical School on May 2.

The following members of the Medical Faculty appeared on the program at the meeting of the Virginia Academy of Science in Blacksburg on May 6 and 7: Dr. H. E. Jordan Spoke on Evaluation of the Evidence for the Conversion of Smooth into Striated Muscle; Dr. C. C. Speidel gave a moving picture demonstration on The Transformation of Cross-Striated Substance into Retraction Clots in Skeletal and Cardiac Muscle Fibers; Dr. E. L. Corey spoke on Effect of Cortico-adrenal Extract Administration Following Hypophysectomy in the Rat; and Dr. S. G. Bedell spoke on Observations on the Lateral-Line Organs of Living Amphibian Larvae With Special Reference to Orange Colored Granules of the Sensory Cells. The following Research Fellows also appeared on the program: Dr. H. P. Newbill spoke on The Production of Ependymogenous Macrophages in the Human Following Intraventricular Injection of Colloidal Thorium Dioxide, and Dr. E. DeWitt Miller spoke on Cell Changes in Bone Marrow of Adrenalectomized Cats.

At the meeting of the University of Virginia Medical Society on May 6, Dr. Robert S. Palmer, of the Massachusetts General Hospital, spoke on the subject of Rationale and Results of the Surgical Treatment of Essential Hypertension.

News Notes from Duke University.

On April 18 and 19, Miss Mary J. Dunn, of the

United States Public Health Service, conducted a clinic at Duke Hospital for public health nurses of Durham and nearby counties.

On April 19, Dr. G. H. Whipple, Dean of the School of Medicine and Dentistry, Rochester University, spoke at the meeting of the Duke Chapter of Sigma Pi, his subject being, Hemoglobin, Plasma Protein and Tissue Proteins: Their Production and Interrelation in the Body.

On April 26, Miss Elizabeth P. Rice, Director of Medical Social Service, New Haven Hospital, spoke to the medical students on The Need for Medical Social Service.

Dr. John A. Wolfe,

Recently on the staff of the Southwestern State Hospital at Marion, has located at Abingdon where he is engaged in general practice.

Dr. Edwin L. Kendig, Jr.,

Class of '36, University of Virginia School of Medicine, recently on the staff of the Babies' Hospital at Wrightsville Sound, Wilmington, N. C., is now interning at Johns Hopkins Hospital, Baltimore, on the Pediatric Service. On July 1, he will go to Bellevue Hospital, New York City, as assistant resident on Pediatrics.

Dr. H. H. Hines,

Recently of Pardee, is locating in Richmond on June 1, where he will be associated with Dr. Marvin E. Nuckols at 1614 Monument Avenue, in general practice.

Dr. F. A. Snidow,

Formerly of Iowa City, Iowa, has moved to El Paso, Texas., where he is associated with the El Paso Medical and Surgical Clinic. His practice will be limited to obstetrics and gynecology. Dr. Snidow graduated in medicine from the University of Virginia in 1932.

The West Virginia State Medical Association

Is to hold its annual meeting at White Sulphur Springs, July 11-13, under the presidency of Dr. Charles W. Waddell of Fairmont. There will be two special orations by members—one on a medical and one on a surgical subject—and addresses by several out-of-state guests.

Civil Service Examination for Medical Technician.

The U. S. Civil Service Commission announces open competitive examination on June 13, for medical technician (field roentgenology). The necessary forms may be obtained from the Secretary, Board of U. S. Civil Service Examiners, at any first class post office, or from the Commission at Washington, D. C., stating title of examination desired.

New Members on State Advisory Board on Mental Hygiene.

Governor Price has announced the following new appointments to the Advisory Board on Mental Hygiene: Dr. J. S. DeJarnette, superintendent of the Western State Hospital, Staunton; Dr. Joseph Blalock, superintendent of the Southwestern State Hospital, Marion; and Dr. O. B. Darden, Westbrook Sanatorium, Richmond. Members reappointed are: Dr. Hugh Henry, Petersburg; Dr. George Brown, Williamsburg; Dr. Harvey DeJ. Coghill; Dr. Finley Gayle; Dr. Howard Masters, and Dr. James Asa Shield, the last four being from Richmond.

Graduate Course in Electrocardiography.

An intensive two weeks' course in Electrocardiography, for graduate physicians, will be given at the Michael Reese Hospital, Chicago, August 22-September 3. The course is open to both the beginning and advanced student and the class will be limited in number.

Full information may be obtained from The Medical Librarian, Michael Reese Hospital, 29th and Ellis Ave., Chicago, Ill.

Virginia Academy of Science.

At the annual meeting of the Academy, held at the Virginia Polytechnic Institute in Blacksburg, May 6 and 7, Colonel Earle B. Norris, dean of engineering at the Institute, was elected president, and Dr. E. C. L. Miller, Richmond, continues as secretary-treasurer. Dr. Walter B. Martin, Norfolk, was named chairman of the medical section.

Dr. J. Newton Dunn,

Blackstone, was recently appointed a member of the executive committee of the Chamber of Commerce of that city.

Dr. David C. Wilson,

Charlottesville, was recently elected as vice-president of the local Rotary Club.

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Former Internes of Medical College of Virginia Hold Reunion.

Approximately 200 physicians, who are former internes of the Medical College of Virginia, held their third annual meeting at the College, April 27, under the presidency of Dr. John S. Weitzel, of Richmond.

The morning program consisted of papers by Dr. J. M. Meredith, University of Virginia; Dr. H. C. Spalding and Dr. W. P. Barnes, both of Richmond. After a luncheon, clinical pathological conferences were conducted by Drs. Louise Galvin, Harry Walker, and Randolph Hoge, all of the Medical College of Virginia. Following this a smoker was held and the meeting was closed with a banquet and dance.

Officers elected are Dr. Harry Walker, president; Dr. W. P. Barnes, vice-president; and Dr. Nathan Bloom, secretary-treasurer. All are from Richmond.

Married.

Dr. George Winslow Simpson of Norfolk and Miss Virginia Frances Martin of South Norfolk, April 7.

Dr. M. M. Pinckney,

Richmond, was at a recent meeting re-elected one of the vice-chairmen of the local chapter of the American Red Cross.

Dr. J. Randolph Tucker,

Williamsburg, automatically succeeded to the presidency of the Rotary Club of that place at its meeting on April 20.

Medical Director, Life Insurance Company of Virginia.

Dr. Ennion S. Williams, who has been acting medical director of the Life Insurance Company of Virginia since the death of Dr. Charles L. Rudasill last winter, has just been elected to the position of medical director for that company.

International Goiter Conference.

The American Association for the study of Goiter announces that the Third International Goiter Conference is to convene in Washington, D. C., September 12 to 14, 1938. Physicians and others in the United States and other countries desirous of participating in the program are requested to submit titles at their earliest convenience. The general subjects proposed for discussion are: endemic goiter, cretinism, and myxedema; the thyroid in relation to metabolism, nutrition and endocrine glands—physiological and pathological interrelationship and clinical application; and hyperthyroidism.

The official language of the Conference shall be English but interpreters will be furnished for papers read in other languages.

Further information may be obtained from any officer of the American Association, or Dr. Allen Graham, chairman of the Program Committee, 2020 East 93rd Street, Cleveland, Ohio. Dr. W. Blair Mosser, Kane, Pa., is corresponding secretary.

The Virginia Section, American College of Physicians,

Held its meeting in Charlottesville on May 18, with an attendance of thirty-three members. The program included papers by Drs. Carl Speidel, Staige D. Blackford, H B. Mulholland, J. Edwin Wood, Jr., and Andrew D. Hart, all of the University of Virginia. Dr. J. W. Preston, Roanoke, was elected president for the coming year and Dr. George B. Lawson, also of Roanoke, was re-elected secretary.

The New York Academy of Medicine

Will Hold its Eleventh Annual Graduate Fortnight from October 24 to November 4. The subject is "Diseases of the Blood and Blood-Forming Organs", and twenty-three hospitals have accepted the invitation to participate by having prepared afternoon clinics and clinical demonstrations. There will also be addresses by recognized authorities in their special fields, drawn from leading medical centers of the United States.

The New York Academy of Medicine provides this program for the fundamental purpose of medical education. Consequently all members of the medical profession are eligible for registration and are invited to attend. A complete program and registration blank may be obtained from Dr. Mahlon Ashford, 2 East 103rd St., New York City.

Mr. Zehmer Receives Appointment.

Dr. John Lloyd Newcomb, president of the University of Virginia, has announced the appointment of Mr. George Baskerville Zehmer as acting dean of the summer quarter, succeeding the late Charles G. Maphis. Mr. Zehmer is professor of education and director of the extension division of the University, and has most efficiently served the Department of Clinical and Medical Education of the Medical Society of Virginia as its executive secretary since its organization.

American Public Health Association.

The 67th Annual Meeting of this Association is to be held in Kansas City, Missouri, October 25-28, at which time an attendance of 3,000 is expected. "Public Health in the World of Tomorrow" is the central theme of this meeting, and this will be emphasized throughout the program.

Wanted—

Laboratory Technician for small hospital in city of eastern part of Virginia. Address replies to "XYZ", care VIRGINIA MEDICAL MONTHLY, 1200 East Clay Street, Richmond. (*Adv.*)

Medical Research.

Physician having access to a complete Medical Library offers his services to authors or others in locating references, or for medical research of any kind. Reasonable fee. Address "No. 38", care this journal. (*Adv.*)

Home for Convalescences.

A home for the care and treatment of chronic aged and convalescences has been opened at Arrington, Nelson County, Virginia, under the care of Dr. and Mrs. Fred M. Horsley. Information upon request. (*Adv.*)

Obituary Record

Dr. Fletcher Johnston Wright,

Prominent Southside physician, died at his home in Petersburg, May 8, following a brief illness. He was a native of Fluvanna County and sixty-five years of age. Dr. Wright graduated from the former University College of Medicine, Richmond, in 1898, and was a former president of the alumni of the College. He was a member of the State Board of Medical Examiners, representing the Fourth District. Dr. Wright had been a member of the Medical Society of Virginia since 1899 and had served on numerous committees, being chairman of the Advisory Board to the Woman's Auxiliary at the time of his death. He was a member of the American College of Physicians, a member of the executive board of the Virginia Tuberculosis Association, a Mason, and an honorary member of the Petersburg Kiwanis Club. Dr. Wright is survived by his wife, a former president of the State Medical Auxiliary, and two sons, one of them Dr. Fletcher J. Wright, Jr., of Petersburg.

Dr. Samuel Thomas Anderson Kent,

Well-known physician of Halifax County, died at his home in Ingram on May 23, having been in ill health for some time. He was seventy-nine years of age and the oldest physician in Halifax County, both in age and point of service, as he had practiced there continuously for fifty-three years. Dr. Kent graduated from the College of Physicians and Surgeons, Baltimore, in 1882. He was formerly a member of the Virginia House of Delegates and the Halifax County board of supervisors, and was president of the County Telephone Company. Dr. Kent had been a member of the Medical Society of Virginia for fifty-five years. His wife and five children survive him.

Dr. St. Julien Oppenhimer,

Widely known and beloved Richmond physician died May 1, after a brief illness. He was seventy-two years of age and a graduate of the Medical College of Virginia in 1893. He had practiced in Richmond since his graduation. Dr. Oppenhimer was for some years local surgeon for the Chesapeake and Ohio Railway Clinic and was a former surgeon of the Richmond Police Department. He had been a member of the Medical Society of Virginia for forty-five years. Besides his wife and six children, Dr. Oppenhimer is survived by a sister and three brothers, one of whom is Dr. William T. Oppenhimer, also of Richmond.

Dr. Lazarus Karp,

Richmond, died suddenly May 23. He was a native of Latvia and was fifty-one years of age. Dr. Karp graduated from the Medical College of Virginia in 1909 and was for some years associate professor of physiology, anatomy and the practice of medicine at the College. He was an active leader in Jewish group activities, having founded and become the first president of the Richmond Young Men's Hebrew Association, and was vice-president of the Zionist Organization of America, Seaboard Region, and also president of the Richmond District as well as being associated with other organizations of his race. Dr. Karp had been a member of the Medical Society of Virginia for a number of years. His wife and two daughters survive him.

Dr. Edmund Henry Lewis,

Gordonsville, died on February 4, in University Hospital at Charlottesville, Va., death being due to

pneumonia. He was seventy-six years of age and had been in bad health for sometime. Dr. Lewis graduated from Jefferson Medical College of Philadelphia in 1887 and had been a member of the Medical Society of Virginia for a number of years.

Resolutions on Dr. Stark Armistead Sutton.

The following resolutions were recently adopted by the Staff of St. Vincent's Hospital:

Dr. Stark Armistead Sutton was born in 1872, and received his preliminary education at Mr. Galt's School in Norfolk, and his Medical Degree from the University of Maryland in 1894.

He began the practice of medicine with his father, Dr. William T. Sutton, in Norfolk, and immediately associated himself with St. Vincent's Hospital. He was connected with the Health Department of the City in various capacities for many years. He was a member of the Norfolk County Medical Society, Medical Society of Virginia, and American Medical Association. At the time of his death, he was one of the Chiefs in the Gynecological Department of St. Vincent's Hospital.

WHEREAS, on April 1, 1938, Dr. Sutton passed to his reward;

BE IT RESOLVED, that in his passing, St. Vincents Hospital has lost one of its most loyal friends; and,

BE IT ALSO RESOLVED, that the physicians of the Staff of St. Vincent's Hospital have lost a most lovable associate and companion; and,

BE IT FURTHER RESOLVED, that a copy of the resolutions be spread on the Minutes of the Staff, and a copy sent to the family of Dr. Sutton, and that they be published in the VIRGINIA MEDICAL MONTHLY.

J. WARREN WHITE, M. D.
JAMES W. HUNTER, M. D.
RUFUS S. KIGHT, M. D.
Committee.

An Appreciation on Dr. J. B. Wolfe, Jr.

The Clinch Valley Medical Society, at a meeting at Norton, April 30, 1938, adopted the following:

At 4 A. M., April 7th, when trying to catch a nap in the hospital he founded, after working hard way past midnight, the heart, which had wavered and faltered many years, stopped for Dr. Joe B. Wolfe, Jr.

Born in 1869, the son of a physician, he was graduated in medicine in Louisville in 1891, and then at intervals took a number of post-graduate courses in New York. He continued to read and study his individual cases to the end. Of keen intellect and philosophic bent, a keen appreciation of humor, he never played and had no hobbies but his work. He was the dean of the Wise County doctors, who tried hard to have him write and lecture from his rich experiences and profound knowledge of medicine but his modesty prevented his doing either. They bestowed upon him every honor available.

No man within the memory of the oldest of us did as much for the poor as Dr. Joe. No one was ever turned away by him or his hospital for lack of money. No wonder that the mile long procession followed his remains in the worst snowstorm of the winter ten miles to the cemetery at Ramsay, and the slender debutantes in their flimsy garments of silk wept with the aged tottering grandmothers in black as the man of God said the final word and Dr. Joe had gone to join Luke and the multitude of other good doctors gone on before.

Our hearts go out to the family and his clientele. We shall miss him; we shall remember him.

W. A. BAKER
G. T. FOUST
T. J. TUDOR
Committee.

Dr. Wade Hampton Frost,

Professor of Epidemiology and former dean of the Johns Hopkins University School of Hygiene and Public Health, Baltimore, died May 1. He was a native of Marshall, Virginia, and a graduate in medicine of the University of Virginia, 1903. During the World War, Dr. Frost was director of the Red Cross Bureau of Sanitary Service, and the Public Health Service placed him in charge of the study of influenza in the 1918 epidemic. His wife and a daughter survive him.

Dr. Ross Vernet Patterson,

Dean of the Jefferson Medical College, Philadelphia, died May 4. He was sixty-one years of age and graduated from the Jefferson Medical College in 1904.